

# **Oracle® Transportation Planning**

Implementation and User's Guide

Release 12

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Oracle Transportation Planning Implementation and User's Guide, Release 12

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## Oracle Transportation Planning Implementation and User's Guide, Release 12

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# Preface

## Intended Audience

Welcome to Release 12 of the *Oracle Transportation Planning Implementation and User's Guide*.

This guide assumes you have a working knowledge of the following:

- The principles and customary practices of your business area.
- Oracle Transportation Planning

If you have never used Oracle Transportation Planning, Oracle suggests you attend one or more of the Oracle Transportation Planning training classes available through Oracle University.

- The Oracle Applications graphical user interface.

To learn more about the Oracle Applications graphical user interface, read the *Oracle Applications User's Guide*.

See Other Information Sources for more information about Oracle Applications product information.

See Related Information Sources on page xvii for more Oracle Applications product information.

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## **Related Information Sources**

### **Integration Repository**

The Oracle Integration Repository is a compilation of information about the service endpoints exposed by the Oracle E-Business Suite of applications. It provides a complete catalog of Oracle E-Business Suite's business service interfaces. The tool lets users easily discover and deploy the appropriate business service interface for integration with any system, application, or business partner.

The Oracle Integration Repository is shipped as part of the E-Business Suite. As your instance is patched, the repository is automatically updated with content appropriate for the precise revisions of interfaces in your environment.

### **Oracle Applications User's Guide**

This guide explains how to enter data, query, run reports, and navigate using the graphical user interface (GUI) available with this release of Oracle Transportation Planning and any other Oracle Applications products. This guide also includes information on setting user profiles, as well as running and reviewing reports and concurrent processes. Access this user's guide online by choosing Getting Started with Oracle Applications from any Oracle Applications help file.

### **Oracle Order Management Implementation Manual**

This manual provides the setup steps required for successful implementation of the Oracle Order Management suite. Use this manual to perform all functional setups required by Oracle Transportation Planning that must be performed on Oracle Shipping Execution.

### **Oracle Transportation Execution Implementation Manual**

This manual provides the setup steps required to successfully implement Oracle Transportation Execution. Use this manual to perform all the functional setups required by Oracle Transportation Planning that must be performed on Oracle Transportation Execution.

## **Oracle Bills of Material User's Guide**

This guide describes the steps involved in setting up Oracle Bills of Material as well as the procedure involved in using the application. Use this guide to set up Bills of Material and routing for use by Oracle Transportation Planning.

## **Oracle Inventory User's Guide**

This guide provides setup steps and procedure involved in implementation and use of Oracle Inventory. Use this guide as reference for defining items and item attributes, freight classes, etc. for use in Oracle Transportation Planning.

## **Implementing Oracle HRMS**

This guide provides setup steps required to successfully implement Oracle HRMS. Use this guide to setup Locations and Organizations for use in Oracle Transportation Planning.

## **Oracle Receivables User's Guide**

This guide presents the setup steps and procedures involved in implementing and using Oracle Receivables. Use this guide as reference for setting up Customers and Customer Sites.

## **Oracle Payables User's Guide**

This guide describes setups steps and procedures involved in implementing and using Oracle Payables. Use this guide as reference for setting up Suppliers and Supplier Sites used in Oracle Transportation Planning.

## **Do Not Use Database Tools to Modify Oracle Applications Data**

Oracle **STRONGLY RECOMMENDS** that you never use SQL\*Plus, Oracle Data Browser, database triggers, or any other tool to modify Oracle Applications data unless otherwise instructed.

Oracle provides powerful tools you can use to create, store, change, retrieve, and maintain information in an Oracle database. But if you use Oracle tools such as SQL\*Plus to modify Oracle Applications data, you risk destroying the integrity of your data and you lose the ability to audit changes to your data.

Because Oracle Applications tables are interrelated, any change you make using an Oracle Applications form can update many tables at once. But when you modify Oracle Applications data using anything other than Oracle Applications, you may change a row in one table without making corresponding changes in related tables. If your tables get out of synchronization with each other, you risk retrieving erroneous information

and you risk unpredictable results throughout Oracle Applications.

When you use Oracle Applications to modify your data, Oracle Applications automatically checks that your changes are valid. Oracle Applications also keeps track of who changes information. If you enter information into database tables using database tools, you may store invalid information. You also lose the ability to track who has changed your information because SQL\*Plus and other database tools do not keep a record of changes.



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# Overview of Oracle Transportation Planning

This chapter covers the following topics:

- What is Oracle Transportation Planning?
- Key Features
- Integration with Other Applications
- A Transportation Planner's Typical Day

## What is Oracle Transportation Planning?

Oracle Transportation Planning provides comprehensive decision support tools that shrink the planning cycle for transportation managers in companies that control shipment of products. Such companies include manufacturers, distributors, and retailers.

### Transportation Dimensions You Can Plan for Using Oracle Transportation Planning

Oracle Transportation Planning enables planning in the following dimensions of transportation:

#### **Time: Operational**

Oracle Transportation Planning focuses on operational planning. Operational transportation planning typically occurs one day to one week in advance of execution.

#### **Mode: Truck**

Oracle Transportation Planning focuses on transportation by trucks. It supports decisions among truckload, less-than-truckload, and parcel moves. The system handles rail, ocean, and air modes to the extent that you can model them in terms of truckload, less-than-truckload, or parcel moves. For example, time-definite heavy air freight services have rating structures and transit time rules similar to those of parcel services.

**Place: Domestic**

Oracle Transportation Planning facilitates planning for domestic transportation needs. Domestic transportation implies transportation within regional geographies, such as a country or a continent. Examples are North America, the European Union, Japan, and Australia. The emphasis on domestic transportation planning is due to the nature of truck transportation planning that the system supports.

**Flow: Outbound, Inbound, Intra-Company, Drop Ships, Outside Processing**

Oracle Transportation Planning enables planning for movement of goods from and to organizations within the host company (shipper), from suppliers to the host company, from outside processors to the host company, from the host company to customers, and from the host company's supplier directly to its customer.

**Note:** Oracle Transportation Planning focuses on transportation of discrete packaged items, as opposed to bulk commodities.

**Transportation Planning Functions You Can Perform Using Oracle Transportation Planning**

Oracle Transportation Planning addresses the load consolidation, mode selection, and carrier selection problems planners encounter in operational transportation planning.

**Load Consolidation and Continuous Move Building**

Load consolidation involves combining small shipments into full truckloads. A shipment larger than a truckload may have to be split up in the load planning process. The main focus of the process, however, is to group smaller shipments together to allow them to travel by lower priced modes. Typically, shipments are grouped to move by full truckload instead of less-than-truckload and by less-than-truckload instead of parcel. While the consolidation of shipments traveling from the same origin to the same destination is not very complex, the grouping of more disparate shipments uses more complex strategies.

Oracle Transportation Planning consolidates loads and builds continuous moves by combining trips into efficient routes. Continuous moves typically fetch discounts from carriers. For more information, see , "Transportation Planning Concepts, page 2-1.

**Mode Selection**

The mode selection process involves selecting the lowest cost option to move a load from among modes that can carry the load in the desired quantity and time frame. While a full truckload offers the lowest rate per unit of cargo, the shipper must pay for the entire truck even if the cargo carried is small. Smaller shipments can travel more economically on less-than-truckload or parcel carriers. The cost per unit cargo in less-than-truckload, though significantly higher than that for highly utilized full truckload moves, is much lower than that of parcel carriers. Less-than-truckload carriers, however, have minimum charges that may make the parcel mode

advantageous for the smallest shipments.

Oracle Transportation Planning enables you to find the best mode for a shipment.

### **Carrier Selection**

The carrier selection process typically involves selecting the lowest cost option to move a load from among the carriers that can carry the load in the desired time frame. Other considerations include preferred carriers (volume commitments) by lane and compatibility constraints, such as customer preferences for certain carriers.

Oracle Transportation Planning finds the lowest-price option for consolidated loads or unconsolidated shipments.

## **Key Features**

Oracle Transportation Planning provides the following key features:

### **Optimal Load Building and Continuous Moves**

Oracle Transportation Planning builds optimal loads using pooling and multi-stop load strategies. Pooling, also known as hubbing or zone skipping, optimizes the use of consolidation, deconsolidation, and cross-docking facilities. This strategy enables you to consolidate many small shipments with different origins and destinations. Such consolidation makes it possible to utilize low truckload transportation rates for line hauls while limiting higher cost parcel or less-than-truckload (LTL) rates to short deliveries from hub to destination or origin to hub. You can also create full truckloads and save additional cost by routing trucks to multiple pick-up and drop-off stops.

A continuous move combines a sequence of trips into a logical mission that a single truck can perform. For carriers, continuous moves increase asset utilization and decrease driver and equipment imbalance. Many carriers share these benefits with shippers by offering discounts. Oracle Transportation Planning generates additional cost savings by enabling you to evaluate continuous move opportunities after building optimal loads.

### **Optimal Mode and Carrier Selection**

Oracle Transportation Planning determines the best mode, carrier, service, and vehicle type for each trip. In doing so, it considers cost, transit time requirements, preferred carrier arrangements, vehicle availability, and various compatibility constraints on a shipment-by-shipment basis.

### **Planner Workbench**

The Planner Workbench in Oracle Transportation Planning allows you to view and manipulate transportation plans graphically, monitor key performance indicators, and rapidly resolve exceptions, all from a single, integrated portal.

The advanced map-based user interface in Oracle Transportation Planning helps

planners identify problem areas visually and speeds correction of these problems using intuitive tools. For example, on the map view, planners can observe when a less-than-truckload move parallels a multi-stop truckload move into which the less-than-truckload move can be incorporated. Through graphical editing, the planner can solve this problem by clicking the truckload move and the less-than-truckload move, then adding the less-than-truckload move to the truckload move. The planner receives immediate feedback on the cost impacts and any business rule violations that may result from such graphical edits.

## **Exception Management**

To guide you to areas of potential concern, Oracle Transportation Planning generates exceptions that highlight potential problem situations for the planner. Along with exception alerts, Oracle Transportation Planning provides tools that assist in resolving such issues.

## **Firming**

Oracle Transportation Planning enables the planner to firm trips and continuous moves to maintain them in a desired state. Firming holds associated decisions as hard constraints whenever the plan is re-optimized and also after firmed trips and continuous moves are released for execution.

## **Detailed Reporting**

Oracle Transportation Planning provides reports that serve two key purposes. Some reports provide the appropriate details of the plan, in the appropriate formats, to the various participants in the plan's execution, such as carriers and loading, unloading, consolidation, or deconsolidation facilities. Other reports calculate and present Key Performance Indicators. You can filter report information according to plan, facility, and other parameters.

## **Integration with Other Applications**

Oracle Transportation Planning fully integrates with the Oracle E-Business Suite, primarily through its direct integration with Oracle Transportation Execution and Oracle Shipping Execution.

Oracle Transportation Planning integrates with Oracle Transportation Execution and Oracle Shipping Execution to obtain plan input data and to facilitate plan output execution. The information flow between Oracle Transportation Planning and these transportation execution systems includes setup information and transaction information. Setup information include details such as customers, suppliers, items, carriers, lanes, vehicle types, compatibility constraints, and pricing. Transaction information input from Oracle Shipping Execution comprise delivery lines, firm deliveries, and firm trips. Oracle Transportation Planning captures all of this information from the execution systems through a process called snapshot.



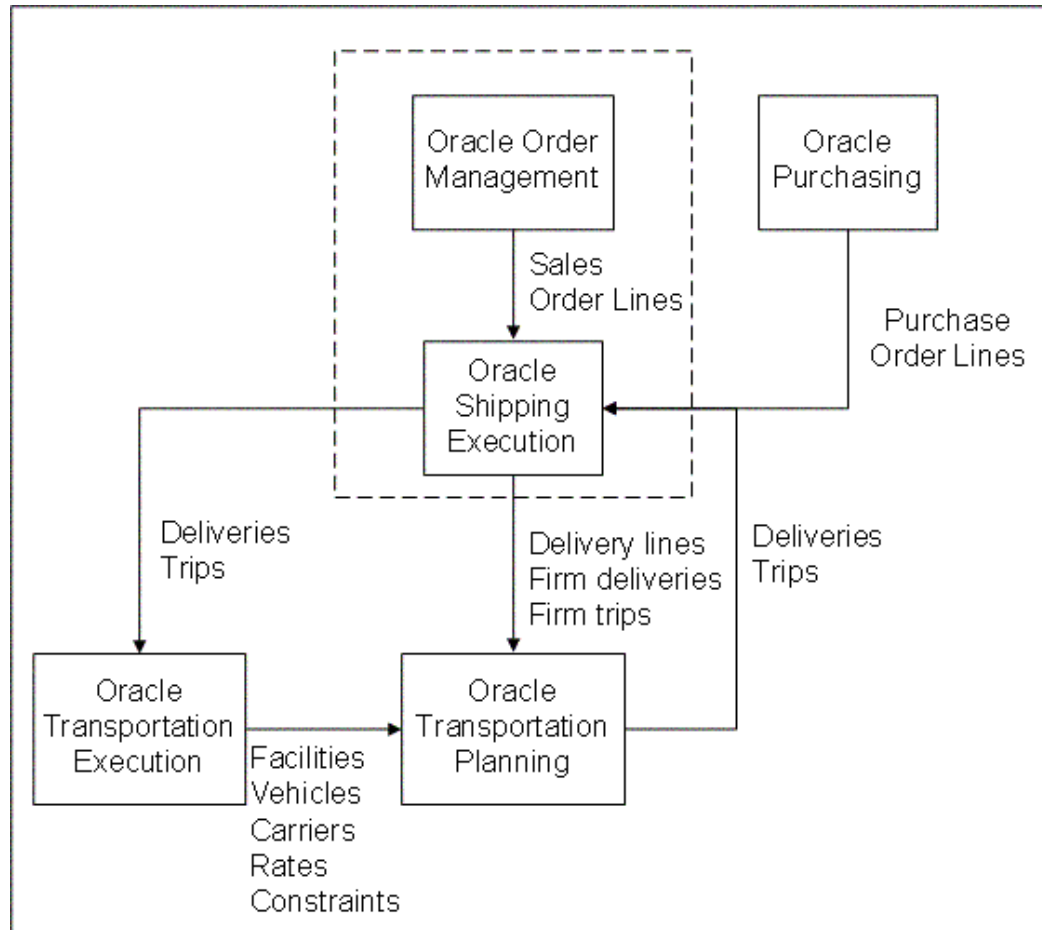
Based on snapshot information, the transportation planning engine generates continuous moves, trips, delivery legs, stops, and deliveries. The planning system releases the plan output to the transportation execution system through a process called release.

The Oracle Shipping Execution system applies various validations before accepting the release from the transportation planning system. After Oracle Transportation Planning successfully releases trips and continuous moves to the transportation execution system, Oracle Transportation Execution can perform further downstream operations, such as load tendering, tracking, tracing, freight rating, and auditing.

'Interaction Between the Transportation Execution and the Transportation Planning Systems, page 1-6 presents the flow of information between the transportation execution system and the Oracle Transportation Planning system.

Oracle Shipping Execution converts order lines input from Oracle Order Management or Oracle Purchasing to delivery lines. Oracle Transportation Planning obtains information including delivery lines, firm deliveries, and firm trips from Oracle Shipping Execution. The planning system obtains setup information, such as, facilities, vehicle types, rates, carriers, and constraints, from Oracle Transportation Execution. Oracle Transportation Planning releases plan output including deliveries and trips to Oracle Shipping Execution. Oracle Shipping Execution validates the plan output and if the release is successful, Oracle Transportation Execution executes the planned trips.

### ***Interaction Between the Transportation Execution and the Transportation Planning Systems***

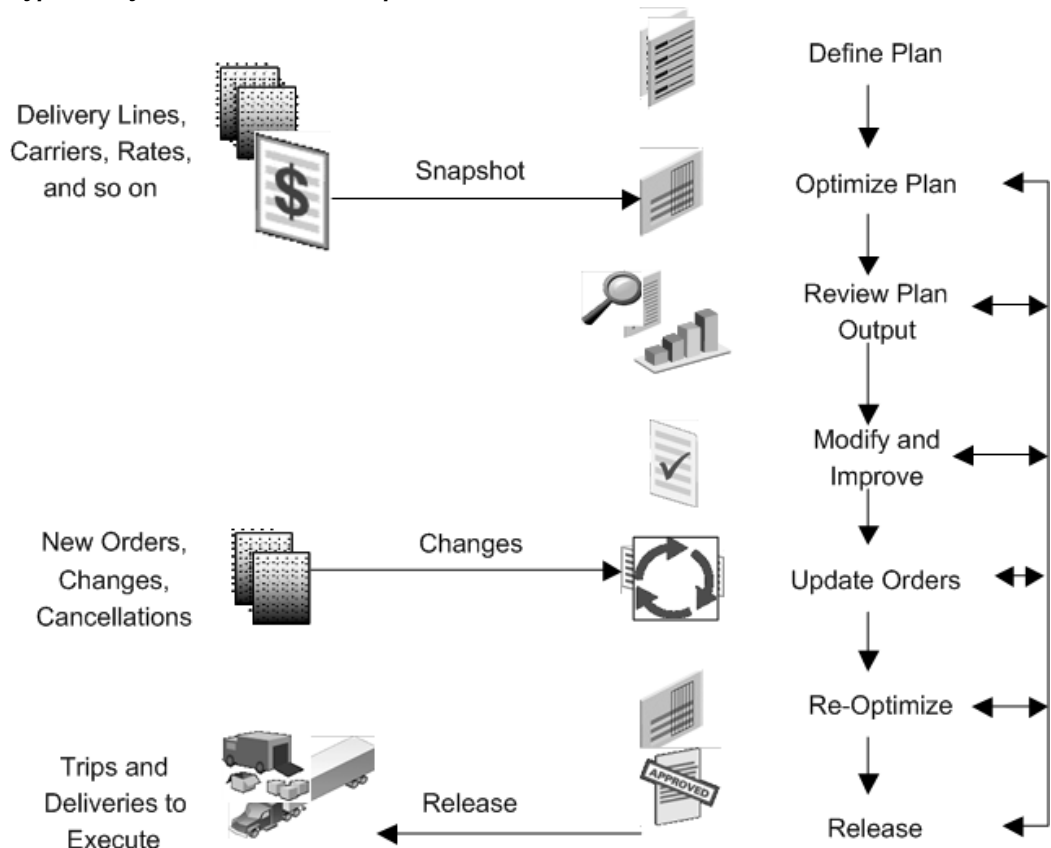


## **A Transportation Planner's Typical Day**

'Typical Day in the Life of a Transportation Planner, page 1-7 illustrates the business process flow involved in planning a company's transportation requirements using Oracle Transportation Planning. The description following the figure explains the illustrated business processes.

Note that you do not have to set up configuration parameters and base data on a daily basis but must define such data before you can create a plan. Examples of configuration parameters include profiles, global preferences, user preferences, and map data. Examples of base data include carriers, lanes, rates, vehicles, carrier commitments, and compatibilities.

### *Typical Day in the Life of a Transportation Planner*



For a transportation planner, a typical day involves the following activities:

1. Define plan.

The planner creates a plan by entering a Plan Name, Plan Start and End Dates and Times, and Plan Options.

2. Launch plan.

The planner launches the plan. The snapshot process then captures setup data and transaction data from the transportation execution system. Setup data include information such as carriers, services, rates, and lanes. Transaction data include information such as purchase orders, sales orders, earliest and latest availability dates, earliest and latest delivery dates, origins, and destinations. The planning engine generates the plan output based on specified Plan Options and data captured in the snapshot.

The planner can choose to run the plan either immediately after the data snapshot or after an Audit Report run. The Audit Report helps you verify data integrity before the plan run. After the data snapshot and corrective actions for data integrity based on the Audit Report, the planner can run the transportation plan.

3. View plan output.

Transportation planners can view plan output, such as plan summary, truckloads summary, less-than-truckload moves summary, parcel moves summary, trip details, delivery details, and key performance indicators.

4. Review exceptions.

While running the plan, the Oracle Transportation Planning system generates exceptions. The planner reviews these exceptions and decides whether to resolve or ignore them.

5. Modify plan output and improve plan.

The planner can manipulate the plan based on identified exceptions as well as use Oracle Transportation Planning tools to find additional savings opportunities to improve the plan.

After manipulating the plan, the planner can re-run exceptions to generate the latest exceptions that the changes made to the plan caused or eliminated.

The planner can make manual changes to the plan again based on the latest exceptions or proceed to finalizing the plan. This is an iterative process.

6. Run order update process.

If the planner has been working with the plan output for a length of time during which changes may have happened to orders, the planner may run the Order Update process to capture the latest order information. Changes may have occurred in delivery line information, such as changes in quantity, cancellation of an existing order, and changes in available to ship dates or available to deliver dates.

The Update Orders functionality in Oracle Transportation Planning enables you to identify such recent changes in delivery lines or orders that must immediately appear in a transportation plan.

7. Run re-optimization.

The planner can now re-optimize the plan to obtain plan output that considers the recent changes in delivery line information. This may be a complete re-optimization of the plan or a partial re-optimization with some elements of the plan frozen.

8. Review key performance indicators.

The planner may review key performance indicators to judge the quality and effectiveness of the planning solution. This enables planners to correct problems in the plan and to continually improve the plan output. Key performance indicators help identify elements of the plan that need to be modified, corrected, or improved before releasing the plan for execution.

Also, transportation managers can perform what-if analysis for various scenarios and predict the impact of network and policy changes, such as adding or removing

a consolidation facility, designating a preferred carrier, or using larger trailers. Planners can compare these different scenarios by evaluating the cost based key performance indicators in various plan scenarios.

**9. Release trips.**

Finally, the planner releases the plan output to the execution system. You can release planned trips to the execution system in any of the following ways:

- Release entire plan.
- Release specific trips based on rules defined while specifying plan options.
- Flag trips and continuous moves for release and then release all flagged items.
- Release any individual trip or continuous move directly.
- Search for and find the best candidates for release and then release them.

**10. Run reports.**

Oracle Transportation Planning provides six reports that users can review for the following purposes:

- To evaluate general trends in planning problems and solutions
- To understand the output of planning efforts in detail
- To communicate planned activities to carriers, customers, suppliers, and shipping, receiving, consolidation, and deconsolidation facilities.



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# Transportation Planning Concepts

This chapter covers the following topics:

- Basic Data Elements
- Regions and Zones
- Lanes
- Logistics Flows
- Modes and Carrier Services
- Load Consolidation Strategies

## Basic Data Elements

Key data elements involved in transportation planning and execution include the following:

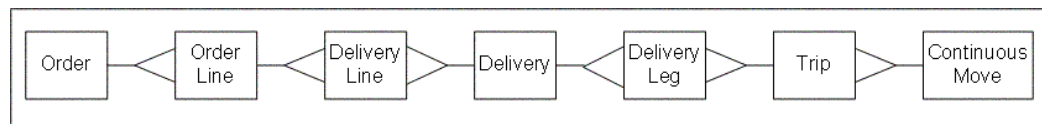
- Orders
- Order Lines
- Delivery Lines
- Deliveries
- Delivery Legs
- Trips
- Trip Legs
- Continuous Moves

Figure Basic Data Elements, page 2-2 shows the relationship between the basic data elements. An Order can contain multiple Order Lines. An Order Line belongs to exactly

one Order and can contain one or more Delivery Lines. One or more Delivery Lines make up a Delivery. A Delivery Line can belong to no more than one Delivery. A Delivery can have one or more Delivery Legs. Any number of Delivery Legs can be assigned to a Trip. Multiple Trips make up a Continuous Move.

The symbol < in the illustration indicates a one-to-many relationship. For example, in the figure, the symbol indicates that one Order can contain multiple Order Lines. Similarly, the symbol > indicates a many-to-one relation, such as multiple Delivery Legs can be assigned to a Trip.

#### **Basic Data Elements**



### **Order**

An Order is a collection of various items in various quantities to be transported from originating locations to destination locations. An Order is a collection of one or more Order Lines. An Order can be a purchase order, sales order, or internal move order.

### **Order Line**

An Order Line is an element of an Order and represents a specified quantity of a specified item to transport from a specific location to another specific location. An Order Line belongs to exactly one Order. An Order may include one or more Order Lines.

### **Delivery Line**

A Delivery Line represents a specified quantity of a specified item to transport from a specific location to another specific location, with, potentially, a specific availability date and time or delivery deadline. A Delivery Line belongs to exactly one Order Line. An Order Line consists of one or more Delivery Lines, but, typically, a one-to-one correspondence exists between Order Lines and Delivery Lines.

An Order Line is usually split into multiple Delivery Lines only in specific circumstances that require doing so. For example, when an Order Line is too voluminous to fit within a single truck or when sufficient inventory availability does not exist for the entire Order Line quantity to be fulfilled at the same time, the Order Line may be split into multiple Delivery Lines.

### **Delivery**

A Delivery is a collection of Delivery Lines that share a specific common origin and destination and travel together from that origin to that destination. A Delivery contains one or more Delivery Lines that correspond to Order Lines from one or more Orders. A



Delivery Line can belong to no more than one Delivery.

### **Delivery Leg**

A Delivery Leg represents a direct traversal by a Delivery between two locations through a consistent means of transport, where consistent indicates that any change of vehicle is transparent to the shipper. This may be transportation by less-than-truckload or parcel carrier, a direct truckload movement, or one or more stop-to-stop legs of a multi-stop truckload movement. A Delivery Leg associates exactly one Delivery to exactly two stops (an origin and a destination) on a Trip.

### **Delivery Itinerary**

A Delivery Itinerary represents the sequenced series of Delivery Legs through which any Delivery is transported. A Delivery Itinerary consists of one or more Delivery Legs each of which, typically, corresponds to a different Trip.

### **Trip Leg**

A Trip Leg refers to a direct non-stop traversal between two locations by a consistent means of transport. This may mean a direct origin-to-destination transit by less-than-truckload or parcel carrier, a direct truckload move, or the transit between consecutive stops of a multi-stop truckload movement.

### **Trip**

A Trip is a sequenced series of one or more Trip Legs constituting a continuous movement by a consistent means of transport. In reality, every Trip Leg constitutes an entire Trip except that a multi-stop truckload includes multiple, sequenced Trip Legs. Every Trip Leg, therefore, belongs to exactly one Trip and a Trip consists of one or more Trip Legs.

### **Continuous Move**

A Continuous Move is a sequenced series of two or more Trips that a single truck makes. Empty Trips (trips not bearing any cargo) can be present in a Continuous Move. Every Trip in a Continuous Move belongs to exactly one Continuous Move. Not every Trip needs to be part of a Continuous Move.

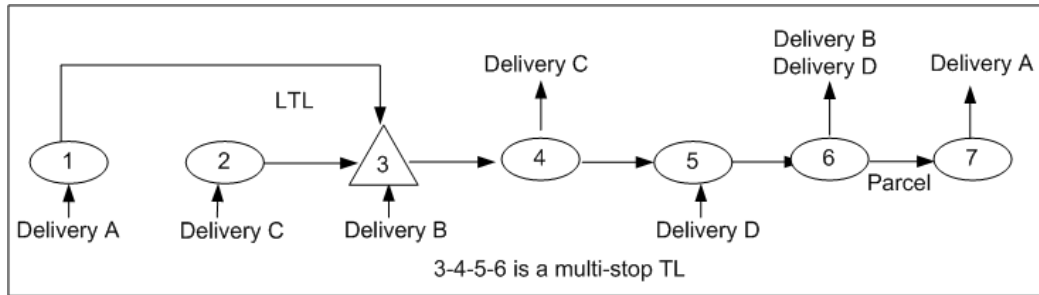
#### **Example**

Consider four deliveries: A, B, C, and D. Figure 'Example for Deliveries, Delivery Lines, Orders, and Trips, page 2-4 illustrates this example.

Delivery A travels from origin 1 to stop 3 by a less-than-truckload carrier and delivery C travels from origin 2 to stop 3 by a less-than-truckload carrier. Delivery B joins deliveries A and C at pool point 3 and they are consolidated to form a truckload. The truckload proceeds to stop 4, which is the destination point for delivery C. The truckload containing deliveries A and B proceeds to stop 5, where delivery D joins it. The truckload, now containing deliveries A, B, and D, proceeds to stop 6, which is the

final destination point for deliveries B and D. From stop 6, delivery A is shipped through parcel mode to its destination point 7. The path 3-4-5-6 represents a multi-stop truckload. For more information on multi-stop truckloads, see Multi-Stop Truckloads, page 2-14.

**Example for Deliveries, Delivery Lines, Orders, and Trips**



The following table shows the origins and destinations of deliveries A, B, C, and D.

Delivery	Origin	Destination
A	1	7
B	3	6
C	2	4
D	5	6

A multi-stop truckload 3-4-5-6 travels from origin 3 to destination 6 with stops at locations 4 and 5. This constitutes a Trip with three Trip Legs.

The following table shows the trip legs in the multi-stop truckload.

Trip Leg Sequence	Origin	Destination	Deliveries on Board
1	3	4	A, B, C
2	4	5	A, B
3	5	6	A, B, D

Apart from the multi-stop truckload, the moves contain three Trips, each consisting of exactly one Trip Leg. The following table shows the other Trips involved in the

movement of deliveries A, B, C, and D.

Mode	Origin	Destination	Deliveries on Board
LTL	1	3	A
LTL	2	3	C
Parcel	6	7	A

The delivery itineraries for the four Deliveries consist of the following Delivery Legs. The following table shows the Delivery Legs in the itineraries of Deliveries A, B, C, and D.

Delivery	Leg 1	Leg 2	Leg 3
A	LTL 1-3	TL 3-6	Parcel 6-7
B	TL 3-6	--	--
C	LTL 2-3	TL 3-4	--
D	TL 5-6	--	--

Delivery Leg 2 of Delivery A, Delivery Leg 1 of Delivery B, and Delivery Leg 2 of Delivery C are on board Trip Leg 1 of the multi-stop trip.

## Regions and Zones

Regions are defined administrative areas, such as cities, states, or countries. User-defined Zones model regions of operation that do not match defined administrative Regions. You define Zones as collections of Regions. For example, a carrier can define a Zone that includes the five states of Washington, Oregon, California, Nevada, and Arizona. You can define Zones at any geographic level.

## Lanes

A Lane describes a transportation corridor connecting an origin Region or Zone to a destination Region or Zone. You can identify origins and destinations as a zip or postal code, city, state, country, or Zone. A Lane may be described as broadly as Japan to the United States or as narrowly as Taipei to zip code 94065. As implemented in Oracle Transportation Execution, the Lane entity is carrier specific.

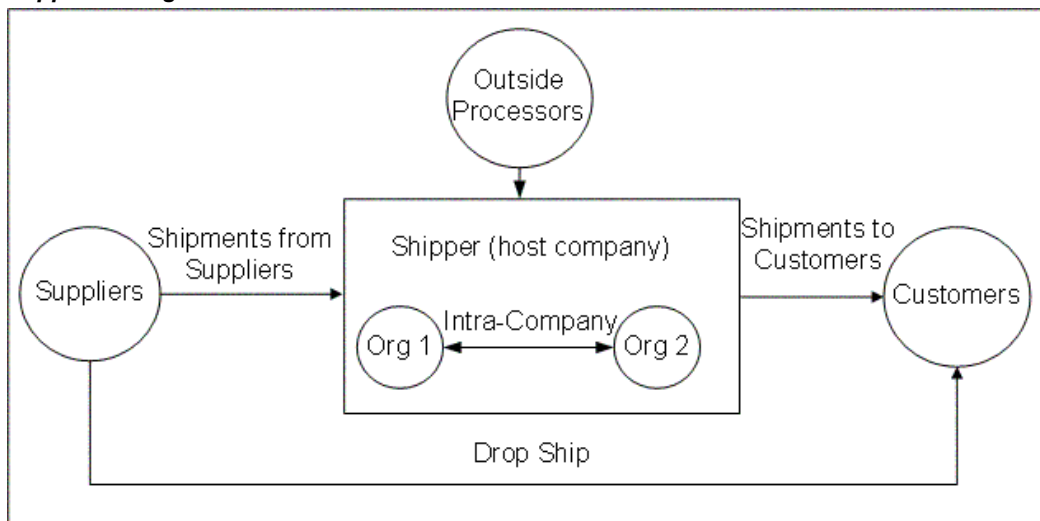
## Logistics Flows

Oracle Transportation Planning supports the following logistics flows in a shipper company.

- Inbound from suppliers
- Outbound to customers
- Intra-company
- Inbound from outside processors
- Drop ships

The following figure illustrates the logistics flows that Oracle Transportation Planning supports. Shipments flow inbound to the host company from the supplier. Shipments move outbound to customers from the host company. The shipper company may also arrange for shipments to travel directly from its supplier to its customer. Such movements are called drop ships. Also, the host company receives shipments from outside processors that work on an intermediate assembly of the host company's product. The host company may also move goods between different organizations within the company.

**Supported Logistics Flows**



### Outbound Movements

The Sales Order is the source document with Oracle Order Management as the source system. The customer's Purchase Order serves as the reference document. The Ship-From facility is the shipper's organization and the Ship-To facility is the Customer

Site. For more information, refer to *Oracle Order Management User's Guide*.

### Inbound Movements

The Purchase Order is the source document with Oracle Purchasing as the source system. The supplier's Sales Order serves as the reference document. The Ship-From facility is the Supplier Site, while the Ship-To facility is the shipper's organization. For more information, refer to *Oracle Purchasing User's Guide*.

### Intra-Company Movements

Both Purchase Order and Sales Order exist within the shipper organization for intra-company moves. The Sales Order is the source document for Oracle Transportation Planning with Oracle Order Management as the source system. In Oracle Order Management, the destination (Ship-To facility) is a fictional customer site that represents the destination facility within the shipper company. Oracle Transportation Planning translates this fictional location to the actual shipper organization location.

### Drop Shipments

The shipper's Purchase Order serves as the main source document with Oracle Purchasing as the source system. The customer's Purchase Order serves as the reference document. The Ship-From facility is the Supplier Site and the Ship-To facility is the Customer Site.

### Outside Processing

Oracle Transportation Planning facilitates the planning of movement of intermediate assemblies from other companies that perform part of the manufacturing process to the host or shipper company. However, Oracle Transportation Planning does not plan for movement of unfinished goods for intermediate jobs to outside processors from the host company.

For inbound movements from outside processors, the shipper's Purchase Order serves as the source document with Oracle Purchasing as the source system. The outside processor's Sales Order serves as the reference document. The Ship-From facility is the outside processor's organization and the Ship-To facility is the shipper's organization.

The following table summarizes the description of logistics flows supported by Oracle Transportation Planning system:

Logistics Flow	Source System	Source Document	Ship-From Facility	Ship-To Facility
Outbound	Oracle Order Management	Sales Order	Shipper organization	Customer site

Logistics Flow	Source System	Source Document	Ship-From Facility	Ship-To Facility
Inbound	Oracle Purchasing	Purchase Order	Supplier site	Shipper organization
Intra-Company	Oracle Order Management	Sales Order	Shipper organization	Shipper organization
Drop Shipments	Oracle Purchasing	Purchase Order	Supplier site	Customer site
Outside Processing	Oracle Purchasing	Purchase Order	Outside processor organization	Shipper organization

## Modes and Carrier Services

Oracle Transportation Planning supports decisions among truckload, less-than-truckload, and parcel modes. The system handles rail, ocean, and air modes only to the extent that you can model them as truckload, less-than-truckload, or parcel modes. For example, time-definite heavy air freight services have rating structures and transit time rules similar to those of parcel services.

### Truckload

Truckload carrier services involve a shipper who hires a truck and a driver to travel between two points. The shipper decides how the truck reaches the destination from the origin: the route, the stops made along the way, and what needs to be done at each stop.

The carrier can charge the shipper based on flat rates or per unit of distance, time, weight, or volume. The shipper may incur additional charges that include the following:

- Stop charges
- Unloading and loading charges
- Origin and destination surcharges

This mode becomes most economical when the truck is fully loaded and the deviation from a direct route is minimum. While truckload transportation offers the lowest rates per unit of cargo when the hired equipment is well utilized, a shipper needs to pay for the entire truck or trailer even if the amount of cargo carried is small. For this reason, smaller shipments or loads can travel more economically through less-than-truckload

carriers.

### **Less-than-Truckload**

Less-than-truckload carriers typically operate fixed, scheduled, hub-and-spoke truck networks over which individual pieces of cargo can travel between various origins and destinations.

In less-than-truckload moves, the shipper does not manage the transportation assets. The shipper only has cargo picked up and delivered. The actual routing of goods between the origin and the destination is not controlled by the shipper.

Less-than-truckload carriers pick up the cargo, route it through their own scheduled network of trips and hubs, and deliver it at the destination.

Less-than-truckload rating is based largely on unit of weight. Less-than-truckload carriers define weight breaks and apply deficit rating to fill in differences between weight breaks. Rates per unit vary by origin and destination pair as well as by freight class.

Costs per unit of cargo for less-than-truckload movements, while significantly higher than those for nearly full truckload moves, are much lower than those for parcel carriers. As less-than-truckload carriers optimize their pickup, delivery, and handling systems for relatively large pieces, they apply minimum charges per shipment. This makes parcel carriers advantageous for the smallest shipments.

### **Parcel**

Parcel carriers operate in a manner similar to less-than-truckload carriers in that they carry distinct pieces over hub-and-spoke networks. The handling systems, however, are designed to carry very high volumes of very small packages.

Parcel carriers charge the shipper based on quantity of cargo shipped. Shippers generally pay for each package separately. The parcel rate for a package is based on weight, origin and destination, and service. Examples for services offered are Overnight, Second Day, and Third Day. For groups of packages over 150 pounds, hundredweight (cwt) service rates are sometimes available. In these schemes, the cost is calculated per 100 pounds of cargo; the number of packages is not considered.

Due to the intense cost of small package handling, parcel carriers demand a high cost per unit of cargo weight. Most corporate shippers make use of parcel services for only the very smallest of shipments.

### **Carrier Services**

In the less-than-truckload and parcel modes, various service levels constitute an important component of the carrier's value offering. Oracle Transportation Planning therefore selects a service level as well as a carrier for each load or shipment. Most often, service levels indicate various transit time or delivery commitments that a carrier makes to a shipper.

For example, a parcel carrier may offer the following kinds of services:

- Same Day
- Priority Overnight
- Standard Overnight
- Second Day
- Third Day

Similarly, a less-than-truckload carrier's services may include:

- Standard
- Expedited
- Deferred
- Definite

Usually, faster service corresponds to higher cost. Oracle Transportation Planning, therefore, trades off the cost and transit times of various kinds of services offered by carriers.

## Load Consolidation Strategies

Load consolidation groups smaller shipments or pieces of split-up shipments together in order for them to travel by a mode priced lower than the best available if these shipments were to travel separately. The optimization process may also combine such trips into continuous moves.

Oracle Transportation Planning considers different load consolidation strategies to optimize cost. While simple consolidation involves grouping shipments with the same origin, destination, and time frames, more complex strategies can group more disparate shipments. Pooling, Cross-Docking, and Multi-Stop Truckloads are consolidation methods that Oracle Transportation Planning can apply to meet such requirements.

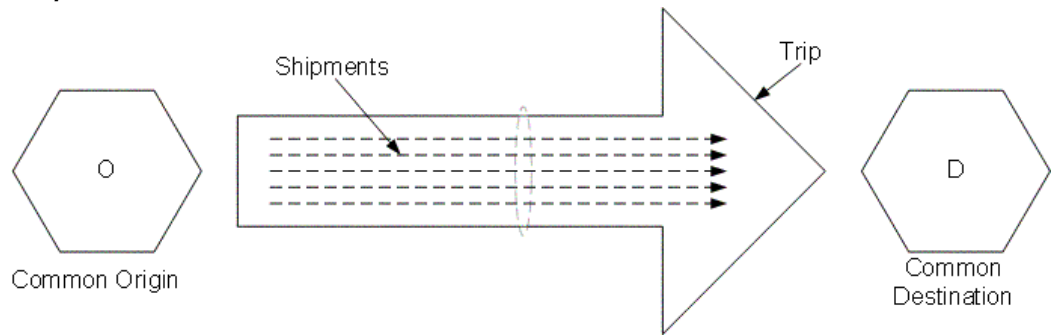
### Simple Consolidation

Simple consolidation refers to an optimization process that groups shipments traveling from the same origin to the same destination in the same time frame. While this strategy gains economies with the least amount of effort and disruption, it is limited in the value it can create.

The following figure illustrates this optimization method. Several shipments travel from a common origin O to a common destination D in a single trip.



### ***Simple Consolidation***



### **Pooling**

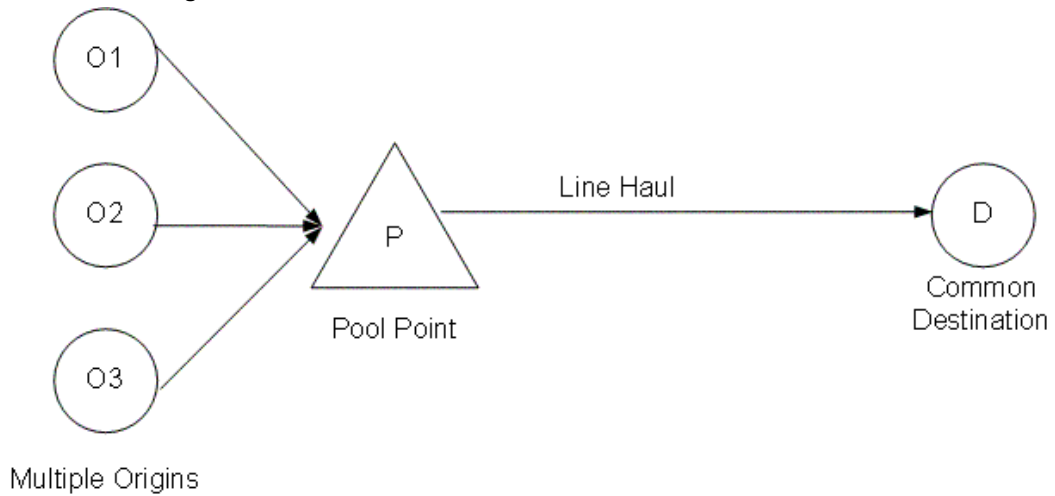
The pooling strategy reduces transportation costs by combining multiple less-than-truckload shipments into truckloads either by bringing less-than-truckload pick-ups together at a consolidation point, by breaking truckloads into multiple less-than-truckloads for local delivery, or both.

### **Inbound Pooling**

In this approach, shipments from different origins travel separately by higher-priced modes to consolidation or pooling points and then join together for line-haul by a lower-priced mode.

The following figure illustrates inbound pooling. Shipments from origins O1, O2, and O3 travel separately to pool point P where they are consolidated for line haul to a common destination D.

### ***Inbound Pooling***

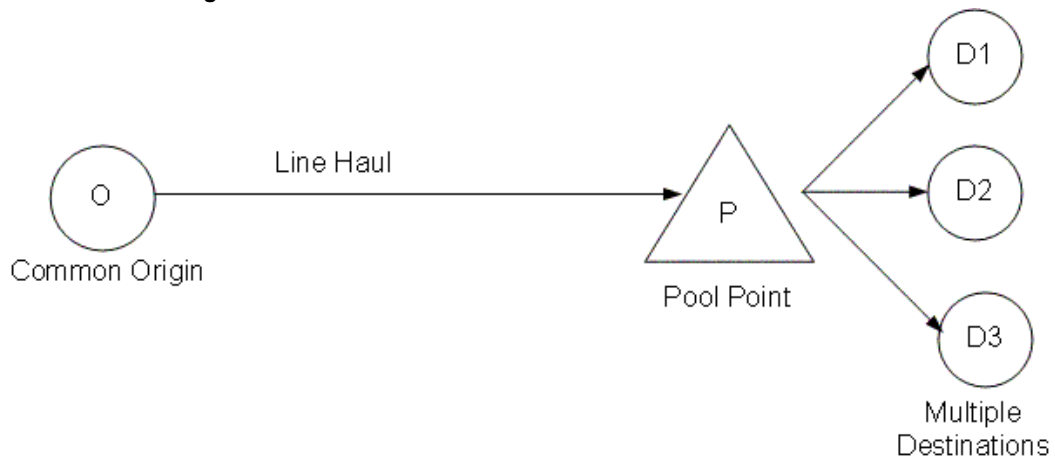


### **Outbound Pooling**

The concept of inbound pooling may occur in reverse, with load deconsolidation after line-haul for final delivery by higher-priced modes. This is called outbound pooling.

The following figure illustrates outbound pooling. A truck carrying shipments from a common origin O travels to a pool point P where the load is deconsolidated. The shipments then travel separately by other modes to their separate destinations D1, D2, and D3.

### ***Outbound Pooling***



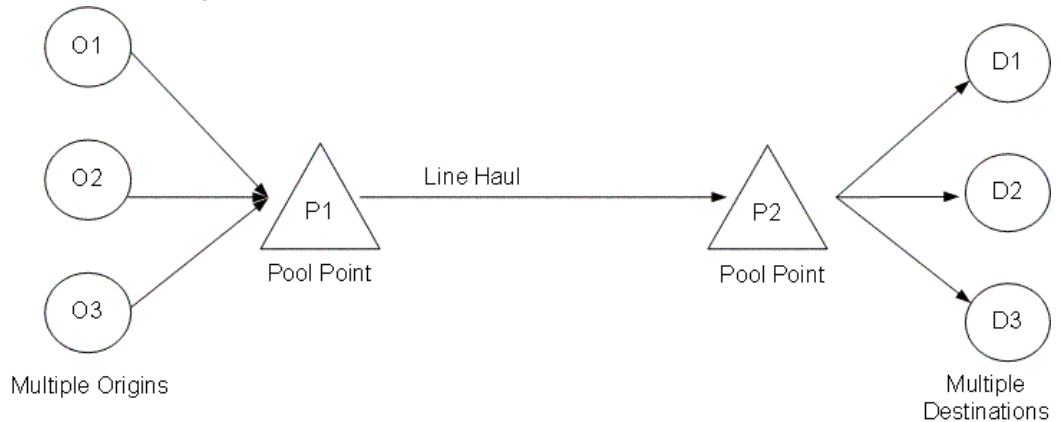
### **Multi-Tier Pooling**

Combining inbound and outbound pooling approaches and applying both outbound consolidation and inbound deconsolidation to build a line-haul load is known as

multi-tier pooling.

The following figure illustrates multi-tier pooling. Shipments traveling separately from origins O1, O2, and O3 are consolidated for line haul at pool point P1. The line haul carries the shipments to pool point P2 where the load is deconsolidated. The shipments then travel separately to their respective destinations D1, D2, and D3 by other modes.

#### **Multi-Tier Pooling**



#### **Hub-and-Spoke Cross-Docking**

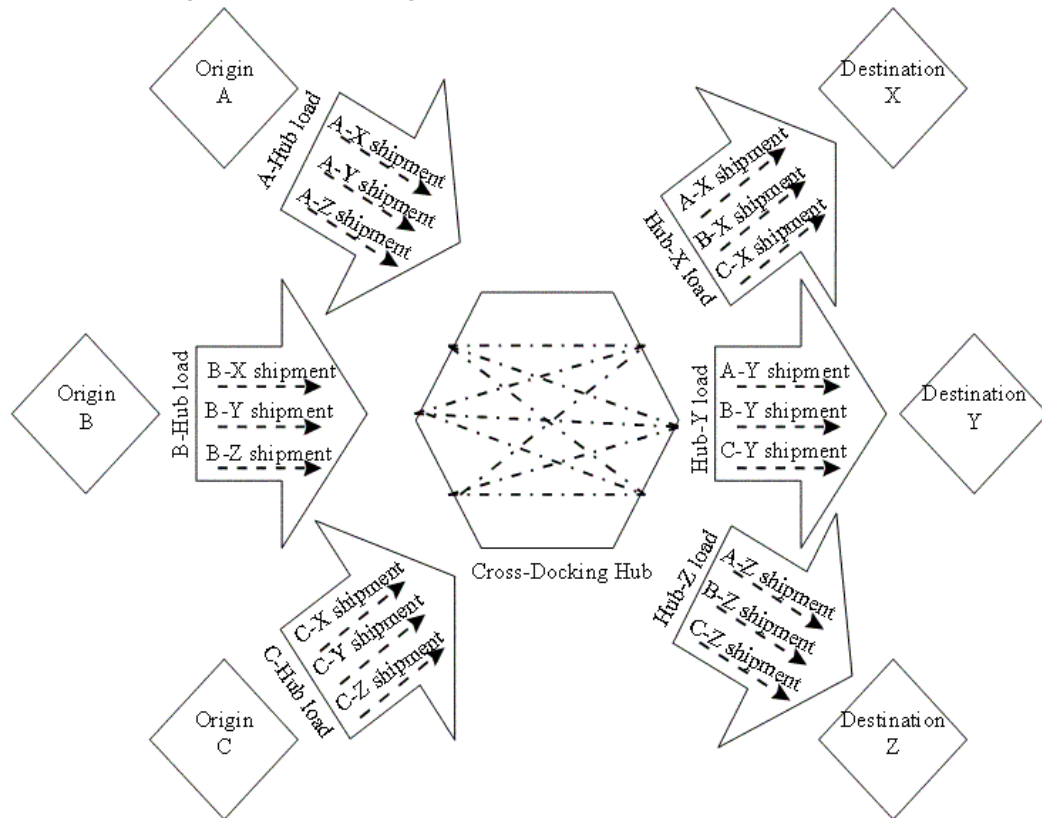
Multiple consolidations and deconsolidations may occur at the same pooling point. This may allow small shipments traveling on different line-haul loads to be consolidated at their common origin so that they together comprise a full truckload. If this occurs, both inbound and outbound, the consolidation and deconsolidation, or reconsolidation, occur at the same point. This yields a hub-and-spoke or cross-docking scenario, similar to the typical operations of hubbed passenger airlines or the internal operations of less-than-truckload trucking companies. Companies applying this strategy internally, effectively in-source their less-than-truckload business.

The following figure illustrates a hub and spoke cross-docking scenario. A-X, A-Y, and A-Z are shipments that originate from A and are consolidated together. B-X, B-Y, and B-Z are shipments that originate from B and are consolidated together. C-X, C-Y, and C-Z are shipments that originate from C and are consolidated together. Note that the notation A-X indicates a shipment bound for destination X from origin A, A-Y indicates a shipment bound for destination Y from origin A, and so on. The shipments, consolidated at each origin, arrive at the cross-dock facility. At the cross-dock facility, the shipments are deconsolidated and then consolidated based on their destinations into the following loads:

- A-X, B-X, C-X
- A-Y, B-Y, C-Y
- A-Z, B-Z, C-Z

The newly consolidated loads travel to destinations X, Y, and Z.

### **Pure Hub and Spoke Cross Docking**



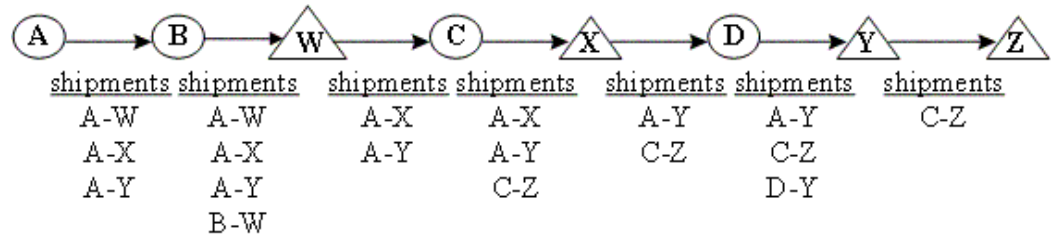
### **Multi-Stop Truckloads**

Planners can combine heterogeneous shipments into multi-stop truckloads. This involves missions that pick up goods or drop them off in more than one location. While the truck may move less than fully loaded for some part of its trip, this method can still bring great economies in comparison with less-than-truckload or parcel movements. The savings as compared to less-than-truckload moves are greater as the truck's overall utilization rises and as the deviation from a direct route between the first origin and the final destination decreases. Some carriers permit interspersing of loading and unloading points while others require that all loading stops occur before the first unloading stop.

Figure 'Multi-Pick Up, Multi-Drop Off Load, page 2-15 shows a multi-stop truckload move with a number of pick-up and drop-off stops. The truckload picks up three shipments bound for stops W, X, and Y at origin stop A. At stop B, the truck picks up another shipment traveling to stop W. The truck drops the shipments from stops A and B that were bound for W at this stop. The truck proceeds with the remaining shipments picked up from A, bound for stops X and Y. At stop C, the truck picks up another shipment bound for stop Z. At stop X, the truck drops off the shipment picked up from

A that was bound for X. The truck proceeds with the remaining shipments to stop D, where it picks up another shipment bound for stop Y. At stop Y, the truck drops off the two shipments, one from A and the other from D, which were bound for Y. The truck then proceeds to stop Z where it drops off the shipment picked up from C that was bound for Z.

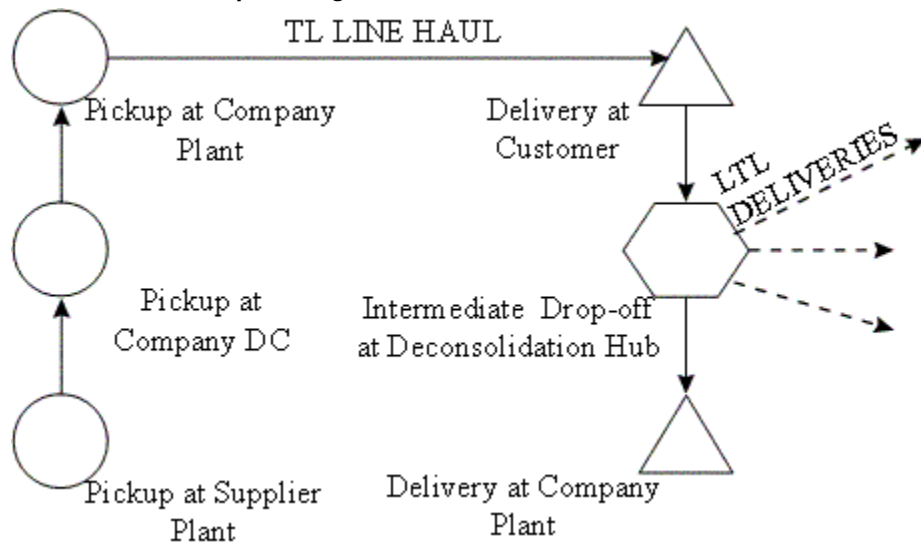
**Multi-Pick Up, Multi-Drop Off Load**



Oracle Transportation Planning applies all of the consolidation strategies separately, as well as in combination. A fully optimized solution may include complex combinations of pooling and multi-pick or multi-drop trips.

The following figure shows a combined multi-stop and pooling scenario in which a truck makes several pick-ups and then several drop-offs. One such drop-off stop is at a deconsolidation center, from where several orders continue to final delivery by less-than-truckload trips.

**Combined Multi-Stop/Pooling Scenario**



**Continuous Moves**

After constructing optimized trips, the transportation planning process considers combining the trips into continuous moves. A continuous move consists of a sequence

of trips that a single truck can serve as one mission.

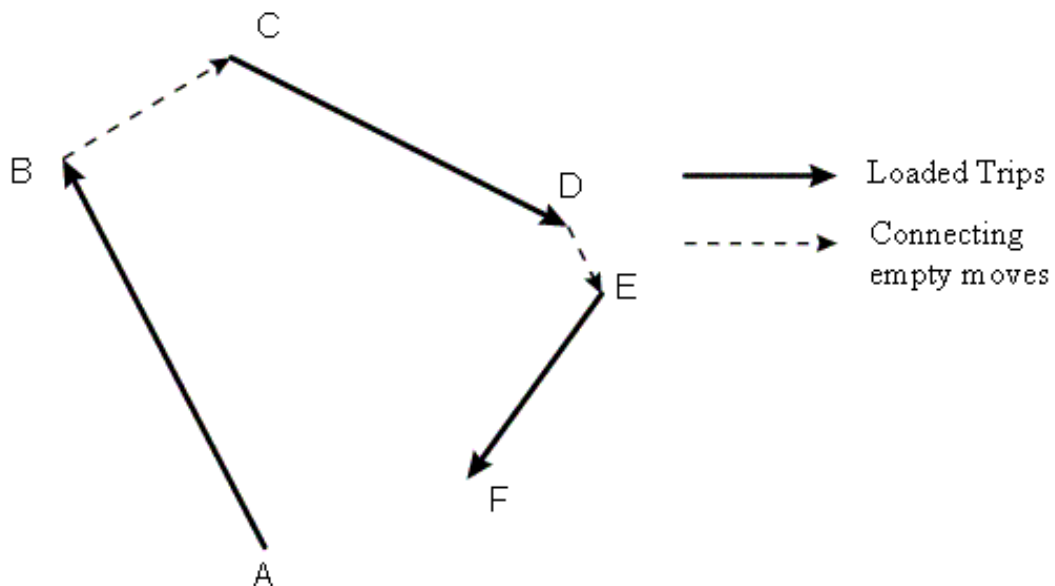
Truckload carriers often give preferential pricing for continuous moves, relative to the sum of the individual trips making up the move. This is because the combination of movements helps the carrier to address geographical equipment imbalances and the massed business volume helps the carrier to increase resource utilization. Pricing advantages often reach significant enough levels to justify the inclusion of empty movements between loaded legs, as part of the continuous move building process. These empty trips are called deadheads.

Oracle Transportation Planning supports various pricing schemes for continuous moves.

The figure 'Continuous Move, page 2-16 illustrates a continuous move. A truck carries a shipment from its origin A to its destination B. The truck then proceeds without any cargo from point B to point C. At C, the truck picks up another shipment and carries the shipment to its destination D. The truck then travels unloaded from point D to point E. At E, the truck picks up a shipment and carries the shipment to its destination F. A-B-C-D-E-F is a continuous move. A-B, C-D, and E-F are loaded trips and B-C and D-E are empty trips.

In the figure, the bold arrows indicate loaded trips and the dotted arrows indicate empty trips.

**Continuous Move**



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## Setup Overview

This chapter covers the following topics:

- Setting up Oracle Transportation Planning
- Related Applications
- Key Implementation Decisions
- Setup Checklist
- Setup Requirements Chart
- Implementation Starting Point

### Setting up Oracle Transportation Planning

Setting up Oracle Transportation Planning includes setting up related Oracle applications, such as Oracle Order Management, Oracle Transportation Execution, and Oracle Shipping Execution. In setting up these applications, you may need to make only specific modifications to existing data. Check with your implementation team to determine which setup requirements have already been fulfilled.

Functional setup steps required for Oracle Transportation Planning implementation can be classified as follows:

- Transportation execution systems setup
- Planning system setup

"Transportation Execution System Setup, page 4-1, details the setups that you must perform on Oracle Shipping Execution and Oracle Transportation Execution. The chapter also discusses certain prerequisite setups required to set up the transportation execution system.

"Transportation Planning System Setup, page 5-1, details the setups you must perform on Oracle Transportation Planning. The chapter also includes a discussion on profile options setup.

**Note:** This guide discusses only the functional setup steps specific to Oracle Transportation Planning in detail. For all other setup steps, refer to the corresponding documentation as referenced in the 'Setup Checklist, page 3-4 .

## Related Applications

Oracle Transportation Planning setup includes certain setups on the following Oracle applications:

- Oracle Inventory
- Oracle Bills of Material
- Oracle Order Management
- Oracle Purchasing
- Oracle Shipping Execution
- Oracle Transportation Execution
- Oracle Advanced Supply Chain Planning
- Oracle Project Contracts

For more information and references on these setups, see the 'Setup Checklist, page 3-4 as well as 'Transportation Execution System Setup, page 4-1.

## Key Implementation Decisions

The following sections detail the key decisions that must be made before you begin implementation.

### Facility Creation

Determine whether you want to create facilities manually or automatically. Oracle Transportation Execution supports automatic creation of facilities for supplier sites, customer sites, carrier sites, and organizations. The facility auto-creation routine is triggered when a new wsh\_location is created by the entry of a new customer site, carrier site, or shipper organization. The system also triggers the facility auto-creation routine when it identifies a delivery line in Oracle Transportation Execution or Oracle Shipping Execution that does not have an existing entry in wsh\_locations for its Ship-From or Ship-To location.

The facility auto-creation routine eliminates the need for manual entry of data for each



facility. The auto-creation routine populates facility record attributes with default values. See 'Facility Auto-Creation Template, page B-1 for more information. You can modify the default values as desired.

For locations, organizations, customer sites, or carrier sites created before installing Oracle Transportation Planning, you must first run the Import Shipping Locations Program in Oracle Shipping Execution. This process populates facility record attributes with default values that you can modify as desired. See 'Facility Auto-Creation Template, page B-1 for more information.

Supplier facilities are created when you load a purchase order routing request involving the supplier site.

You can also create facilities manually using the Create Facility page in Oracle Transportation Execution. For more information, see 'Step 16: Set Up Facilities, page 4-20. Creating facilities manually requires entering data for each attribute for each facility record before you can run a plan that involves such facilities.

## **Distance and Transit Time Information**

For truckload routing, the transportation planning and execution systems can use an interface with a distance determining engine to calculate truckload rates that are distance based. The transportation planning system can also use an interface with such an engine for required transit times.

You must determine whether you want to use a distance engine to obtain distance and transit time information or, instead, use distance and transit time approximations. For more information, see 'Truckload Distance and Transit Time With Distance Software, page 4-38 and 'Truckload Distance and Transit Time Without Distance Determining Software, page 4-45.

For less-than-truckload and parcel modes, you can specify transit times for a carrier-service combination for a given origin-destination pair.

## **Map and Time Zone Information**

Oracle Transportation Planning requires that each location has map coordinate information populated to enable graphical mapping of locations. This occurs when the facility is set up in Oracle Transportation Execution. Oracle Transportation Planning supplies a geocoding engine to be included in this process within Oracle Transportation Execution. The geocoding engine supplies a latitude and longitude for any given point, as well as map coordinates corresponding to the projective coordinate system used by the map included with Oracle Transportation Planning. The geocoding engine uses a third party geographical data set in a standard industry format. This data set has to be provided by you. Use the Oracle Transportation Planning loader programs to upload this data into the Oracle Transportation Execution database.

Also, the Oracle Transportation Planning user interface displays various arrival and departure times in their true local times. To calculate local times, the application needs

data regarding which time zone applies to each location, as well as those time zones' offsets from a reference zone. Oracle Transportation Planning uses Greenwich Mean Time (GMT) as the reference zone. To enable time zone identification, time zone data must be populated in the wsh\_location record while creating Facility records. Oracle Transportation Planning provides functionality to populate these fields using externally provided data files, which are incorporated into the facility creation routines of Oracle Transportation Execution.

To obtain geographic data, it is recommended that you use NAVTEQ for North America and Western Europe. For other geographies, use geographic information that local vendors provide. The name of the NAVTEQ product you can use is **US Data Designed and Licensed To Work With Oracle's Transportation Planning Product**. The product number is **C4P6907**.

See 'Map and Time Zone Data Setup, page A-1 for more information.

## Setup Checklist

The following checklist summarizes the steps you must follow to implement Oracle Transportation Planning. It includes setup steps for data that may be shared with other Oracle applications but are required by Oracle Transportation Planning.

Since some setup steps build upon information you define in other steps, perform the setup in the order listed.

Step No.	Setup Step	Application: Seeded Responsibility	Reference
1	Set up Regions and Zones	Oracle Transportation Execution: Oracle Transportation Super User (bulk load)  or  Oracle Shipping Execution: Manufacturing and Distribution Manager (use user interface)	<i>Oracle Transportation Execution Implementation Manual</i>  'Step 1: Set Up Regions and Zones, page 4-2, <i>Oracle Transportation Planning Implementation and User's Guide</i>
2	Set up Locations	Oracle Human Resources: Manufacturing and Distribution Manager	<i>Implementing Oracle HRMS</i>  'Step 2: Define Locations, page 4-4, <i>Oracle Transportation Planning Implementation and User's Guide</i>

<b>Step No.</b>	<b>Setup Step</b>	<b>Application: Seeded Responsibility</b>	<b>Reference</b>
3	Set up Organizations (including accounting and inventory information)	Oracle Human Resources: Manufacturing and Distribution Manager	<i>Implementing Oracle HRMS</i>  'Step 3: Set Up Organizations, page 4-4, <i>Oracle Transportation Planning Implementation and User's Guide</i>
4	Set up Items including Default Pallet	Oracle Inventory: Manufacturing and Distribution Manager	<i>Oracle Inventory User's Guide</i>  'Step 4: Set Up Items, page 4-4, <i>Oracle Transportation Planning Implementation and User's Guide</i>
5	Set up Bills of Material (Optional)	Oracle Bills of Material: Manufacturing and Distribution Manager	<i>Oracle Bills of Material User's Guide</i>  'Step 5: Set Up Bills of Material (Optional), page 4-5, <i>Oracle Transportation Planning Implementation and User's Guide</i>
6	Set up Routing (Optional) (Resources, Departments, Routing)	Oracle Bills of Material: Manufacturing and Distribution Manager	<i>Oracle Bills of Material User's Guide</i>  'Step 6: Set Up Routing (Optional), page 4-5, <i>Oracle Transportation Planning Implementation and User's Guide</i>
7	Set up Freight Classes	Oracle Inventory: Manufacturing and Distribution Manager	<i>Oracle Inventory User's Guide, Oracle Transportation Execution Implementation Manual</i>  'Step 7: Set Up Freight Classes, page 4-5, <i>Oracle Transportation Planning Implementation and User's Guide</i>

<b>Step No.</b>	<b>Setup Step</b>	<b>Application: Seeded Responsibility</b>	<b>Reference</b>
8	Set up Customers and Customer Sites	Oracle Receivables: Manufacturing and Distribution Manager	<p><i>Oracle Receivables User's Guide, Oracle Order Management Implementation Manual</i></p> <p>'Step 8: Set Up Customers and Customer , page 4-5 Sites, <i>Oracle Transportation Planning Implementation and User's Guide</i></p>
9	Set up Suppliers and Supplier Sites	Oracle Payables: Manufacturing and Distribution Manager	<p><i>Oracle Payables User's Guide, Oracle Order Management Implementation Manual</i></p> <p>'Step 9: Set Up Suppliers and Supplier Sites, page 4-5, <i>Oracle Transportation Planning Implementation and User's Guide</i></p>
10	Set up Map and Time Zone Data	Installation setup	<p>'Step 10: Set Up Map and Time Zone Data, page 4-5, <i>Oracle Transportation Planning Implementation and User's Guide</i></p> <p>'Map and Time Zone Data Setup, page A-1, <i>Oracle Transportation Planning Implementation and User's Guide</i></p>
11	Set up Vehicle Types	Oracle Transportation Execution: Oracle Transportation Super User	<p><i>Oracle Transportation Execution Implementation Manual</i></p> <p>'Step 11: Set Up Vehicle Types, page 4-6, <i>Oracle Transportation Planning Implementation and User's Guide</i></p>

Step No.	Setup Step	Application: Seeded Responsibility	Reference
12	Set up Carriers and Carrier Attributes	Oracle Shipping Execution: Manufacturing and Distribution Manager	<i>Oracle Order Management Implementation Manual</i>  'Step 12: Set Up Carriers and Carrier , page 4-11 Attributes, <i>Oracle Transportation Planning Implementation and User's Guide</i>
13	Define and assign Calendars: <ul style="list-style-type: none"> <li>• Workday calendars with Facility receiving and shipping hours of operation</li> <li>• Carrier standing appointments at different facilities</li> </ul>	Oracle Shipping Execution: Manufacturing and Distribution Manager	<i>Oracle Order Management Implementation Manual</i>  'Step 13: Define Calendars, page 4-16, <i>Oracle Transportation Planning Implementation and User's Guide</i>
14	Define Global Shipping Parameters: <ul style="list-style-type: none"> <li>• Default Units of Measure Classes and Default Units of Measure</li> <li>• Cost Allocation Parameters</li> </ul>	Oracle Shipping Execution: Manufacturing and Distribution Manager	<i>Oracle Order Management Implementation Manual</i>  'Step 14: Set Up Global Parameters, page 4-18, <i>Oracle Transportation Planning Implementation and User's Guide</i>
15	Set up Lanes and Lane Groups	Oracle Transportation Execution: Oracle Transportation Super User	<i>Oracle Transportation Execution Implementation Manual</i>  'Step 15: Set Up Lanes and Lane Groups, page 4-20, <i>Oracle Transportation Planning Implementation and User's Guide</i>

<b>Step No.</b>	<b>Setup Step</b>	<b>Application: Seeded Responsibility</b>	<b>Reference</b>
16	Set up Facilities	Oracle Transportation Execution: Oracle Transportation Super User	<p><i>Oracle Transportation Execution Implementation Manual</i></p> <p>'Step 16: Set Up Facilities, page 4-20, <i>Oracle Transportation Planning Implementation and User's Guide</i></p>
17	Define Carrier Commitment Rules	Oracle Transportation Execution: Oracle Transportation Super User	<p><i>Oracle Transportation Execution Implementation Manual</i></p> <p>'Step 17: Set Up Carrier Commitments, page 4-34, <i>Oracle Transportation Planning Implementation and User's Guide</i></p>
18	Set up Vehicle Availability	Oracle Transportation Execution: Oracle Transportation Super User	<p><i>Oracle Transportation Execution Implementation Manual</i></p> <p>'Step 18: Set Up Vehicle Availability, page 4-38, <i>Oracle Transportation Planning Implementation and User's Guide</i></p>
19	Set up Truckload Distance and Transit Time Information <ul style="list-style-type: none"> <li>• with distance software</li> <li>• without distance software</li> </ul>	Oracle Transportation Execution: Oracle Transportation Super User	<p><i>Oracle Transportation Execution Implementation Manual</i></p> <p><i>Oracle Order Management Implementation Manual</i></p> <p>'Step 19: Set Up Truckload Distance and , page 4-38, <i>Oracle Transportation Planning Implementation and User's Guide</i></p>

<b>Step No.</b>	<b>Setup Step</b>	<b>Application: Seeded Responsibility</b>	<b>Reference</b>
20	Set up Less-than-Truckload and Parcel Transit Time Information	Oracle Shipping Execution: Manufacturing and Distribution Manager (transit time for less-than-truckload and parcel)	<p><i>Oracle Transportation Execution Implementation Manual</i></p> <p><i>Oracle Order Management Implementation Manual</i></p> <p>'Step 20: Set Up Transit Times for , page 4-46 Less-than-Truckload and Parcel, <i>Oracle Transportation Planning Implementation and User's Guide</i></p>
21	Set up Rates (Truckload, Continuous Moves, Less-than-Truckload, and Parcel)	Oracle Transportation Execution: Oracle Transportation Super User	<p><i>Oracle Transportation Execution Implementation Manual</i></p> <p>'Step 21: Set Up Rates, page 4-46, <i>Oracle Transportation Planning Implementation and User's Guide</i></p>
22	Set up Compatibility Constraints	Oracle Transportation Execution: Oracle Transportation Super User	<p><i>Oracle Transportation Execution Implementation Manual</i></p> <p>'Step 22: Set Up Compatibility Constraints, page 4-66, <i>Oracle Transportation Planning Implementation and User's Guide</i></p>
23	Set up Profile Options	Oracle Transportation Planning: Transportation Planning Administrator	'Step 23: Set Up Profile Options, page 5-2, <i>Oracle Transportation Planning Implementation and User's Guide</i>
24	Set up Global Preferences	Oracle Transportation Planning: Transportation Planning Administrator	'Step 24: Set Up Global Preferences, page 5-11, <i>Oracle Transportation Planning Implementation and User's Guide</i>

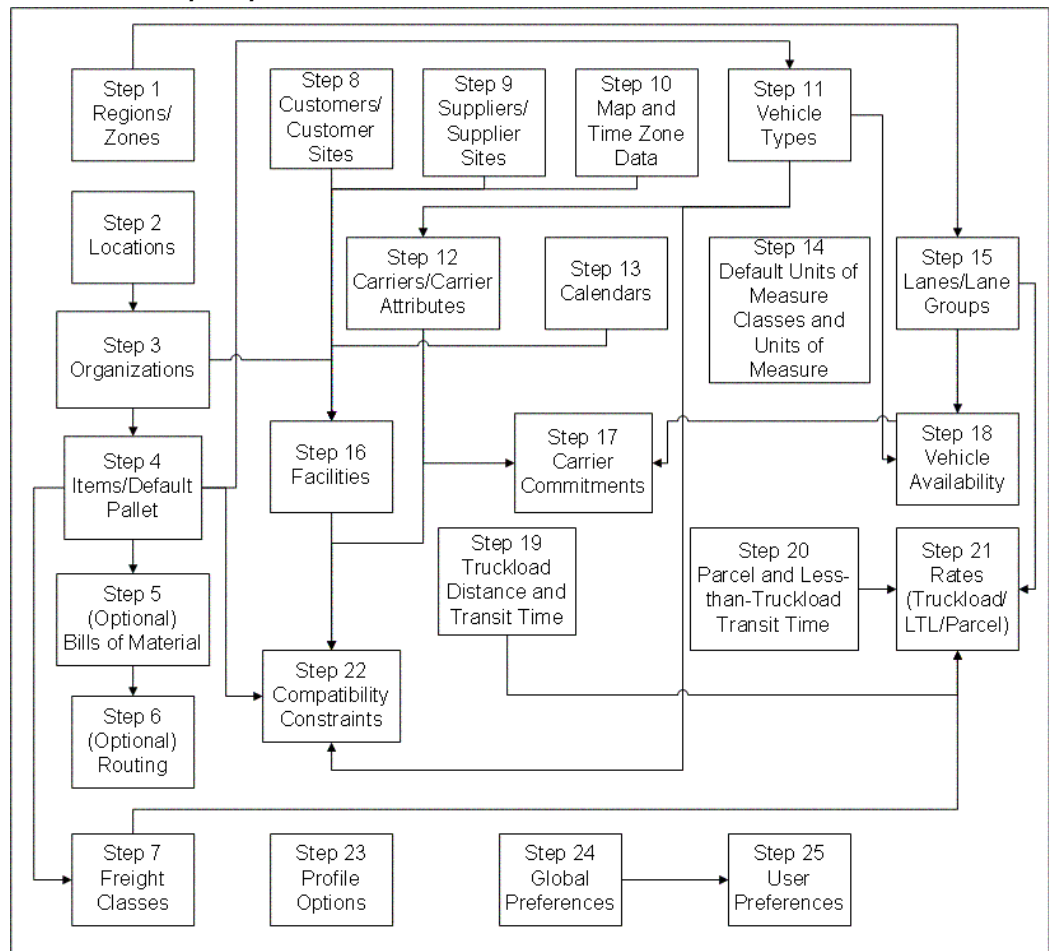
Step No.	Setup Step	Application: Seeded Responsibility	Reference
25	Set up User Preferences	Oracle Transportation Planning: Transportation Planner	'Step 25: Set Up User Preferences, page 5-18, <i>Oracle Transportation Planning Implementation and User's Guide</i>

## Setup Requirements Chart

The following illustration presents the required functional setup steps to implement Oracle Transportation Planning. Arrows in the flowchart indicate data dependencies. Step numbers indicate the order in which you must perform the setup. The 'Setup Checklist, page 3-4 also provides this information.



**Functional Setup Requirements Chart**



## Implementation Starting Point

Before starting the implementation, identify all your implementation team members and the access privileges they require. Oracle Transportation Planning provides Transportation Planner and Transportation Planning Administrator as the seeded implementation responsibilities. Implementation team members may have to use other responsibilities. You may create additional implementation responsibilities if you want to restrict access.

Create Oracle Applications users with appropriate responsibilities for performing implementation procedures. You can use the user name you have been assigned to log on to Oracle Transportation Planning. To create the user, use the System Administrator responsibility.

## Defining an Oracle Applications User

Use the System Administrator responsibility to create the required Oracle Applications user(s). Implementation team members need access to one or more of the following seeded responsibilities:

- System Administrator
- Manufacturing and Distribution Manager
- Shipping Super User
- Oracle Transportation Super User
- Transportation Planner
- Transportation Planning Administrator

Use the Users window to define Oracle Applications users. You must uniquely identify each Oracle Application user by an application user name. For detailed instructions on creating application users, see *Oracle Applications System Administrator's Guide*.

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# Transportation Execution System Setup

This chapter covers the following topics:

- Overview of Transportation Execution System Setup
- Prerequisite Setups
- Setups on Oracle Shipping Execution
- Setups on Oracle Transportation Execution

## Overview of Transportation Execution System Setup

Oracle Transportation Planning integrates with Oracle Transportation Execution and Oracle Shipping Execution to obtain plan input data and to facilitate plan execution. Together, Oracle Transportation Execution and Oracle Shipping Execution are referred to as the **transportation execution system**. The information flow between Oracle Transportation Planning and the transportation execution system includes setup information and transaction information. Setup information includes details, such as customers, suppliers, items, carriers, lanes, vehicle types, compatibility constraints, and pricing. Transaction information includes delivery lines, firm deliveries, and firm trips. A process called snapshot captures all of the setup and transaction information from the Oracle Transportation Execution and Oracle Shipping Execution systems. The planning engine uses the snapshot information to generate trips, continuous moves, stops, deliveries, and delivery legs. Oracle Transportation Planning then releases the plan output to the Oracle Transportation Execution system for execution.

Setup steps required on the transportation execution system are categorized as follows:

- Prerequisite setups
- Setups on Oracle Shipping Execution
- Setups on Oracle Transportation Execution

This chapter presents the information required for each setup in the order specified in the setup flowchart. See 'Setup Checklist, page 3-4 for more information.

## Prerequisite Setups

You must complete the prerequisite setups before you can perform certain functional setups on Oracle Transportation Execution and Oracle Shipping Execution. The following sections discuss these steps.

- 'Step 1: Set Up Regions and Zones, page 4-2
- 'Step 2: Define Locations, page 4-4
- 'Step 3: Set Up Organizations, page 4-4
- 'Step 4: Set Up Items, page 4-4
- 'Step 5: Set Up Bills of Material (Optional), page 4-5
- 'Step 6: Set Up Routing (Optional), page 4-5
- 'Step 7: Set Up Freight Classes, page 4-5
- 'Step 8: Set Up Customers and Customer Sites, page 4-5
- 'Step 9: Set Up Suppliers and Supplier Sites, page 4-5
- 'Step 10: Set Up Map and Time Zone Data, page 4-5
- 'Step 11 : Set Up Vehicle Types, page 4-6

Some of these setups may not be required if you already use Oracle Applications. Other setups may require only minor changes to existing data. Verify with your implementation team to determine which setup requirements have already been fulfilled.

For all navigation paths, refer to 'Navigation Paths, page J-1.

### Step 1: Set Up Regions and Zones

Geographic regions are defined administrative regions, such as cities, states, ports, or airports. For example, San Francisco is a valid city, SFO is a valid airport, and the Port of San Francisco is a valid port.

You create Regions to define lanes. Lanes represent origin-destination pairs that are serviced by a carrier. The system validates origins and destinations against region information.

You create Zones to match service areas and rate structures. A Zone is comprised of multiple geographic regions such as countries or a range of ZIP codes. For example, a carrier may define a Zone as Western United States that includes California, Nevada,

and Oregon.

Zone setup is required only if your carriers use zones to define service lanes. Parcel carriers require Zones setup.

**Note:** You must set up Regions and Zones before setting up Locations, Organizations, Customers, Customer Sites, Carriers, Carrier Sites, Suppliers, and Supplier Sites if you want to auto-create your facilities. Also, to apply rating for truckload, less-than-truckload, and parcel trips, you require Regions and Zones to be mapped to your locations, organizations, customer sites, supplier sites, and carrier sites.

Following setups are required based on the order in which you set up Regions and Zones:

1. Set up Regions and Zones before Locations, Organizations, Customers, Customer Sites, Suppliers, Supplier Sites, Carriers, and Carrier Sites. The system automatically creates facilities for new Organizations, Customers, Customer Sites, Suppliers, and Supplier Sites. Defining Regions and Zones before Locations, Organizations, Customers, Customer Sites, Suppliers, Supplier Sites, Carriers, and Carrier Sites enables accurate location to region mapping.
2. You set up Regions and Zones after defining Locations, Organizations, Customers, Customer Sites, Suppliers, Supplier Sites, Carriers, and Carrier Sites. You must then run the Import Shipping Locations program. This program is available in Oracle Shipping Execution and is accessible using the seeded Manufacturing and Distribution Manager responsibility.

Use the following setup to run the Import Shipping Locations program in order to map Regions to Locations and Sites and auto-create facilities:

- Map Regions: Yes
- Create Facilities: Yes
- Location Type: Both

See 'Step 16: Set Up Facilities, page 4-20 for additional information.

**Note:** You can create Regions and Zones by completing spreadsheet templates and then bulk loading the information into Oracle Transportation Execution. The Regions and Zones templates are available for download on the Oracle Transportation Execution Bulk Load Data page. For detailed information including template field descriptions, see *Oracle Transportation Execution Implementation Manual*.

You can also create Regions and Zones using the Regions and

Zones window in Oracle Shipping Execution. Use the seeded Manufacturing and Distribution Manager responsibility and select Regions and Zones from the Shipping Setup menu to access this window. For more information, see *Oracle Order Management Implementation Manual*.

## Step 2: Define Locations

Define your locations using the Location window in Oracle Human Resources. Use these locations to set up your organizations. Refer to *Implementing Oracle HRMS* for details. You can use the seeded Manufacturing and Distribution Manager responsibility to access the Location window.

## Step 3: Set Up Organizations

Use the seeded Manufacturing and Distribution Manager responsibility to set up your organizations. Also set up accounting and inventory information, such as set of books, calendars, and price variances for the organizations using Oracle HRMS windows.

For more information on setting up Organizations and their attributes, refer to *Implementing Oracle HRMS*.

## Step 4: Set Up Items

Set up your items using the Master Item window in Oracle Inventory. To access this window, use the seeded Manufacturing and Distribution Manager responsibility. After you have set up your items, assign these items to your organizations.

Refer to the *Oracle Inventory User's Guide* for more information.

**Note:** In the item definition, the shippable flag must be checked, otherwise, the snapshot process will not capture the item.

You must also define a default pallet with appropriate weight and volume capacity specifications if you intend to use the palletized planning option. The weight and volume capacity of this default pallet is used to estimate pallet counts (while planning palletized loads) for items that do not have an applicable Container-Item relationship. The default pallet must be of an item type, either seeded or user-defined, which is defined as the Pallet type by the profile option MST: Default Pallet. For more information, refer to 'Planning Palletized Freight, page 7-1.

## **Step 5: Set Up Bills of Material (Optional)**

Use the seeded Manufacturing and Distribution Manager responsibility and the Bills of Material window to specify the bills of material for your items. This step is required only for Assemble-to-Order and Pick-to-Order items.

See *Oracle Bills of Material User's Guide* for more information.

## **Step 6: Set Up Routing (Optional)**

Use the seeded Manufacturing and Distribution Manager and the Bills of Material windows to define Resources, Departments, and Routings for your items. You need to perform this step only for Available to Promise or Advanced Supply Chain Planning items.

See *Oracle Bills of Material User's Guide* for more information.

## **Step 7: Set Up Freight Classes**

Use the seeded Manufacturing and Distribution Manager responsibility to access the Categories window in Oracle Inventory. Define your freight classes using the Structure Name Commodity Code and then assign freight classes to items.

For more information, refer to *Oracle Inventory User's Guide* and *Oracle Transportation Execution Implementation Manual*.

## **Step 8: Set Up Customers and Customer Sites**

Set up customers and customer sites on the Find/Enter Customers window in Oracle Receivables. You can access this window using the seeded Manufacturing and Distribution Manager responsibility.

Refer to *Oracle Order Management Implementation Manual* and *Oracle Receivables User's Guide* for more information.

## **Step 9: Set Up Suppliers and Supplier Sites**

Set up your suppliers and supplier sites on the Suppliers window in Oracle Payables. Access this window using the seeded Manufacturing and Distribution Manager responsibility.

For details, refer to the *Oracle Payables User's Guide*.

## **Step 10: Set Up Map and Time Zone Data**

For details on how to upload map (geocodes) and time zone data, refer to 'Map and Time Zone Data Setup, page A-1.

## Geocodes

To display locations on the map, Oracle Transportation Planning requires that each location has its map coordinate information. This is accomplished at the time you set up the location of a facility in Oracle Transportation Execution. Oracle Transportation Planning supplies a geocoding engine to be included in this process within Oracle Transportation Execution.

Geocoding is the process of deriving map coordinates from the street address, city, state or province, and country or postal code information of a location. The geocoding engine supplies a latitude and longitude for any given point. The geocoding engine also maps coordinates corresponding to the projective coordinate system used by the map in Oracle Transportation Planning. The geocoding engine uses a third party geographical data set in a standard industry format. You must provide this data set.

Use Oracle Transportation Planning loader programs to upload this data into the Oracle Transportation Execution database. In accordance with the high, non-detailed level of the Oracle Transportation Planning mapping functionality, the geocoding engine and data need not be accurate to the street address level. The city or postal code level is sufficient.

## Time Zones

Time zone identification is also based on locations' city or postal code information. Oracle Transportation Planning requires that various arrival and departure times of trips from different locations appear on the Planner Workbench in their true local times. The user interface shows a time zone code of one to five characters with each such local time. This is to ensure that you know for certain which time zone the time corresponds to. To calculate local times, the Oracle Transportation Planning module needs data regarding which time zone applies to each location, as well as the time zone offset from a reference zone. Time zone offset is the time difference in hours ahead or behind a reference zone. Oracle Transportation Planning uses Greenwich Mean Time (GMT) as the reference zone.

Oracle Transportation Planning provides functionality to populate time zone fields using externally provided data files, which are incorporated into the facility creation routines of Oracle Transportation Execution. You also have the ability to change the time zone information on the facility.

## Step 11: Set Up Vehicle Types

**Note:** You set up Vehicle Types on Oracle Transportation Execution, but Vehicle Types setup is a prerequisite for setting up Carriers (assigning Vehicle Types to Carriers).

Oracle Transportation Planning considers vehicle type, and vehicle availability constraints to effectively plan the shipments and choose carriers who can meet delivery requirements. You set up these entities on the Vehicles subtab on the Setup tab in



#### Oracle Transportation Execution.

- Vehicle Class is the highest level grouping of Vehicle Types. Vehicle Class has a fixed list of values including Chassis, Intermodal Container, Maritime Container, Tractor, Trailer, and Truck. You cannot modify these seeded values. Every Vehicle Type must belong to a Vehicle Class.
- Vehicle Type refers to the specific kind of vehicle. In addition to having a Vehicle Class, a Vehicle Type has additional attributes, such as load capacities, dimensions, features, and doors. An example for a Vehicle Type is a 53 feet Refrigerated Truck.

**Note:** Vehicle Types apply only to truckload carriers.

Define Vehicle Types on the Create Vehicle Type page in Oracle Transportation Execution. Vehicle Types are modeled as entities separate from, but linked to, corresponding Inventory items.

Each Vehicle Type associates with a corresponding Inventory item. The Vehicle Type table stores all vehicle attributes that are not stored in MTL\_SYSTEM\_ITEMS. Vehicle Types store additional attributes, such as load capacity, interior and exterior dimensions, door configurations, as well as other vehicle features, such as lift gates and temperature controls.

You can define Vehicle Types by specifying the following:

- Vehicle Type Name: Enter a short descriptor of the Vehicle Type.
- Master Organization: Select the Master Organization code from the list of values.
- Vehicle Class: Select the Vehicle Class name from the seeded list of values defined as Vehicle Class lookups. This is a required field except for Vehicle types upgraded from vehicle items. The possible values for this field are Chassis, Intermodal Container, Maritime Container, Tractor, Trailer, and Truck.
- Status: Status of the vehicle type corresponds to the status of the inventory item, such as Active, Lease, and Obsolete.
- Vehicle Type Description: Enter the long description of the Vehicle Type here.
- Weight and Volume UOM: Enter the Weight and Volume Units of Measure using the lists of values.
- Linear Dimension UOM: This refers to the Length, Height, and Width Unit of Measure.
- Maximum Load Weight: Enter the value for the maximum allowable load weight on the vehicle.

- Internal Volume: Enter the value for the internal volume.
- Pallet Floor Space: Specify the number of pallets that can fit on the vehicle floor.
- Pallet Stacking Height: Specify the number of pallets you can stack on top of each other within the vehicle. For example, if you can only stack one pallet on top of another, enter a stacking height of 2.

If you only want to enter a total pallet capacity and do not want to deal with floor space and stacking height separately, enter the total pallet capacity in the Pallet Floor Space field and 1 in the Pallet Stacking Height field. In doing so, you sacrifice the ability to enforce the constraint on facilities that cannot handle stacked pallets.

**Note:** You must specify at least one of the weight, volume, or pallet capacities for a given vehicle type.

- Effective Volume Capacity: Specify the effective internal volume capacity for a direct move, a pool move, a one-stop move, a two-stop move, a two-pool move, and a three-pool move.

The capacity of the vehicle may be mission dependent. For example, if the vehicle is assigned to a multi-stop truckload that has three drop-offs, then the capacity of the vehicle may be less than its capacity on a direct move. This may be because of specific business processes that require a demarcation between the shipments going to various pool points and stops.

Oracle Transportation Planning supports the definition of mission specific capacity as described in the following example:

- Effective Volume Capacity (Direct Move)
- Effective Volume Capacity (Pool Move)
- Effective Volume Capacity (One-Stop Move)
- Effective Volume Capacity (Two-Stop Move)
- Effective Volume Capacity (Two-Pool Move)

The following table summarizes the implications of these effective volume capacities on planning:

<b>Number of Non-Pool Stops</b>	<b>--</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
Number of Pool Stops	0	--	--	direct	one-st op	two-st op	two-st op	two-sto p
Number of Pool Stops	1	--	pool	Min {pool, two-st op}	two-st op	two-st op	two-st op	two-sto p
Number of Pool Stops	2	two-p ool	two-p ool	two-p ool	two-p ool	two-p ool	two-po ol	two-po ol
Number of Pool Stops	3	two-p ool	two-p ool	two-p ool	two-p ool	two-p ool	two-po ol	two-po ol
Number of Pool Stops	4	two-p ool	two-p ool	two-p ool	two-p ool	two-p ool	two-po ol	two-po ol
Number of Pool Stops	5	two-p ool	two-p ool	two-p ool	two-p ool	two-p ool	two-po ol	two-po ol
Number of Pool Stops	6	two-p ool	two-p ool	two-p ool	two-p ool	two-p ool	two-po ol	two-po ol

You can interpret this table as follows. Note that for this example, stop count includes the origin and the destination.

- No valid trip exists with no pool stops and no non-pool stops, or just one pool stop, or one non-pool stop, that is, at least two stops are required to make a trip.
- If a trip has two stops and both are non-pool stops, then the effective volume capacity of the vehicle is the effective volume capacity of a direct move. In the table, consider the intersection cell of 0 pool stops and 2 non-pools.
- If a trip has two stops and both are pool stops, then the effective volume capacity of the vehicle is effective volume capacity of a two-pool move.
- If a trip has two stops and one was a pool stop and the other a non-pool stop, then the effective volume capacity of the vehicle is effective volume capacity of a pool move.

- For any trip with more than two pool stops, the effective volume capacity is that of the volume capacity of a two pool move.
- If a trip has three stops and all of them are non-pool stops, then the effective volume capacity of the vehicle is the effective volume capacity of a one stop move.
- If a trip includes four stops and all of them are non-pool stops, then the effective volume capacity of the vehicle is the effective volume capacity of a two stop move.
- For any trip with more than three non-pool stops (and no non-pool stop or one non-pool stop), the effective volume capacity is that of the volume capacity of a two stop move.
- If three stops are present on a trip, and two of the stops are non-pool stops and one is a pool stop, then the effective volume capacity of the vehicle is the minimum of the Effective volume capacity of a pool move and the Effective volume capacity of a two stop move.

**Note:** Mission dependent capacity applies only to non-palletized planning. For palletized planning, the effective volume capacity is the direct move capacity, regardless of the type of move involved.

- Dimensions: Specify the interior and exterior vehicle dimensions, including the following:
  - Tare Weight (empty weight of vehicle)
  - Exterior Length
  - Exterior Width
  - Exterior Height
  - Interior Length
  - Interior Width
  - Interior Height
- Additional Features: Use the Additional Features tab to specify the availability of the following additional vehicle features as is applicable.
  - Suspension Type: Air or Spring

- Temperature Control: Chill, Freeze, Insulation or None
- Other vehicle features including:
  - Crane
  - Fork Lift
  - Hazardous Material Allowed
  - Lift Gate
  - Overhead Door
  - Rolling Floor
  - Side Door
- Vehicle door specifications including:
  - Number of Doors
  - Height of Largest Door
  - Width of Largest Door

For additional information, refer to the *Oracle Transportation Execution Implementation Manual*.

## Setups on Oracle Shipping Execution

The following sections discuss setup steps you must perform on Oracle Shipping Execution. For all these setups, use the seeded Manufacturing and Distribution Manager responsibility and the Order Management Shipping menu.

- 'Step 12: Set Up Carriers and Carrier Attributes, page 4-11
- 'Step 13: Define Calendars, page 4-16
- 'Step 14: Set Up Global Parameters, page 4-18

### Step 12: Set Up Carriers and Carrier Attributes

**Setting up Carriers** Set up each carrier's information in Oracle Shipping Execution. Use the seeded Manufacturing and Distribution Manager responsibility and the Carriers window to set up your carriers. When setting up a carrier, you specify the following:

- Name
- Short Name
- SCAC Code
- Default Currency

The Short Name is an important field. All the plan output windows in Oracle Transportation Planning display the Carrier Short Name where applicable. Also, the unit of measure you specify in the Default Currency field in the Carriers window must match with the currency unit of measure you specify on rate charts that are loaded into Oracle Transportation Execution. Otherwise, the rate charts will error out when you try to upload them.

After your carriers are established, you can bulk load lanes, rating zone charts, rates, charges, and discounts into Oracle Transportation Execution. When you load information into Oracle Transportation Execution, validations are performed against the carriers that you set up in Oracle Shipping Execution.

**Note:** In the Carriers window, the Active flag associated with a carrier must be checked. If this flag is not checked, the planning system will not capture the carrier information, its services, or rates during the snapshot process. Hence, the planning system will not consider the carrier for planning.

### Setting up Carrier Services

Carriers operate different transportation modes and often offer different levels of service. For example, Carrier XYZ may offer both Ground Truck and Second Day Air services. To use both offerings, you must associate both the services with Carrier XYZ.

You can associate modes and services to a carrier using the Services tab in the Carriers setup window of Oracle Shipping Execution. The Carriers window also lets you define lookup codes that describe a new service level. You can then associate the newly defined service level with a carrier who offers that service.

**Note:** Although Services is the first tab in the Carriers window, you must first define all the carrier attributes: Addresses/Sites, Contacts, Classifications, Vehicle Types, Rating Payment, and Mode Limits tabs. You must only then define the carrier services on the Services tab. Otherwise, the rating and mode limit attributes that you defined for the carrier will not default at the service level when you add the services. If you define carrier services before defining any of the other attributes, you will need to manually enter the carrier attributes for each carrier-service combination.

### Specifying Addresses and Sites

You can specify the different carrier sites (facilities) or pool points belonging to a carrier on the Addresses/Sites tab in the Carriers window.

### Assigning Vehicle Types to Carriers

All Vehicle Types are not assigned to carriers by default. On the Vehicle Types tab of the Carriers window, you can assign vehicle types to a carrier.

**Note:** Vehicle Types apply only to truckload carriers.

### Setting up Truckload Rating and Continuous Move Attributes

You can set up the truckload rating attributes and continuous move attributes for a carrier using the Rating, Payment tab in the Carriers window.

For detailed information on these attributes, see 'Step 21: Set Up Rates, page 4-46. For attribute details, see the referenced topics in the following tables.

The following table shows the truckload rating attributes

Attribute	Reference
Surcharge Level	'Surcharges, page 4-57
Distance Calculation (method)	'Truckload Rate Types, page 4-48
Maximum Out of Route %	'Accessorial Charges, page 4-50
Unit Rate Basis (Weight, Volume, Piece, Pallet)	'Truckload Rate Types, page 4-48

The following table shows the continuous move rating attributes

Attribute	Reference
First Load Discount	'Continuous Move Freight Rating, page 4-59
Free Deadhead Distance	'Continuous Move Freight Rating, page 4-59
Minimum Time	'Continuous Move Freight Rating, page 4-59
Minimum Distance	'Continuous Move Freight Rating, page 4-59
Rate Variant	'Continuous Move Freight Rating, page 4-59

You can also specify the units of measure associated with a carrier on the Rating,

Payment tab in the Carriers window. Units of measure that you can specify include that of Weight, Volume, Dimension, Time, and Distance. The units of measure specified on the rate charts that you upload must match these carrier default units of measure. If the units of measure do not match, the rate charts will error out during upload.

### Setting up Mode Limits

Set up the following requirements or restrictions for Truckloads, Continuous Moves, Less-than-Truckloads, and Parcels, specific to a carrier, on the Mode Limits tab on the Carriers window.

For detailed information on these requirements, see 'Step 21: Set Up Rates, page 4-46. For details on specific mode limit attributes, see referenced topics in the following table.

Attribute Type	Attribute	Reference
Trip Attribute	Allow Interspersal of Loads	'Accessorial Charges, page 4-50
Trip Attribute	Maximum Number of Stops	'Accessorial Charges, page 4-50
Trip Attribute	Maximum Total Distance	'Truckload Rate Types, page 4-48
Trip Attribute	Maximum Total Time	'Truckload Rate Types, page 4-48
Continuous Move Attribute	Allow Continuous Move	'Continuous Move Freight Rating, page 4-59
Continuous Move Attribute	Maximum Time	'Continuous Move Freight Rating, page 4-59
Continuous Move Attribute	Maximum Distance	'Continuous Move Freight Rating, page 4-59
Continuous Move Attribute	Maximum Deadhead Distance	'Continuous Move Freight Rating, page 4-59
Continuous Move Attribute	Maximum Deadhead Time	'Continuous Move Freight Rating, page 4-59
Layover Requirements	Minimum Layover Time	'Layover Charges, page 4-53
Layover Requirements	Maximum Layover Time	'Layover Charges, page 4-53



Attribute Type	Attribute	Reference
Layover Requirements	Maximum Distance per Day	'Layover Charges, page 4-53
Layover Requirements	Maximum Driving Time per Day	'Layover Charges, page 4-53
Layover Requirements	Maximum On-Duty Time per Day	'Layover Charges, page 4-53
Less-than-Truckload and Parcel Piece Size Restrictions	Length:	'Less-than-Truckload Freight Rating, page 4-62
	<ul style="list-style-type: none"> <li>• Minimum</li> <li>• Maximum</li> </ul>	'Parcel Freight Rating, page 4-63
Less-than-Truckload and Parcel Piece Size Restrictions	Height:	'Less-than-Truckload Freight Rating, page 4-62
	<ul style="list-style-type: none"> <li>• Minimum</li> <li>• Maximum</li> </ul>	'Parcel Freight Rating, page 4-63
Less-than-Truckload and Parcel Piece Size Restrictions	Width:	'Less-than-Truckload Freight Rating, page 4-62
	<ul style="list-style-type: none"> <li>• Minimum</li> <li>• Maximum</li> </ul>	'Parcel Freight Rating, page 4-63

Oracle Transportation Planning takes into account the mode limits specified for the carrier when building trips and assigning carriers to trips.

For additional information including setup of other carrier attributes, refer to the *Oracle Order Management Implementation Manual* or the online help available from the Carriers setup window.

### Assigning Carriers to Organizations

When a Purchase Order is created, either Buying Organization or Supplier must be selected in the Transportation Arranged field (in the Terms and Conditions window). Oracle Transportation Planning will manage the movement of the purchased goods only if you select Buying Organization in this field and then load a Routing Request for the goods. You can access the Terms and Conditions window by clicking the Terms button on the Purchase Orders window in Oracle Purchasing.

The routing request is a message from the supplier indicating when and what quantity of the goods on the Purchase Order will be ready for pickup. It enables the information

entered in a Purchase Order to be considered by Transportation Planning. Oracle Transportation Planning considers a Purchase Order only if its routing request has been recorded in the system. Routing Requests are loaded using inbound loaders accessed via the iSupplier Portal. If you do not specify Buying Organization in the Transportation Arranged field for a Purchase Order, you will not be able to load the routing request for that Purchase Order.

Also, while it is not mandatory, a Purchase Order may have a ship method. If the Purchase Order has a ship method indicated, then the carrier of this ship method must be assigned to the ship-to organization of the Purchase Order. Otherwise, the loading of the routing request for the Purchase Order will fail. Therefore, two options exist if Oracle Transportation Planning is to manage the movement of goods corresponding to Purchase Orders:

1. Do not include ship methods in the Purchase Orders. Note that, since Oracle Transportation Planning will ignore any indicated ship method anyway, this may be the most logical choice.
2. Ensure that any carriers whose ship methods may appear in Purchase Orders destined for a particular Organization are assigned to that Organization. Again, note that Oracle Transportation Planning will ignore the ship method indicated in any Purchase Order when determining a mode, carrier, and service for the shipment, even if the carrier of the ship method on the Purchase Order is correctly assigned to the ship-to Organization.

You can use the following navigation path for carrier assignment: Navigator > Shipping > Setup > Freight Carriers, Cost Types > Freight Carriers.

You should use the seeded Order Management Super User responsibilities for carrier assignment.

## **Step 13: Define Calendars**

You can set up calendars for a facility that specify hours of operation, time windows for carrier pick-up and carrier delivery at a facility, and non-working days. Use the seeded Manufacturing and Distribution Manager responsibility to access relevant setup windows.

### **Workday Calendars and Facility Hours of Operation**

You can specify calendars that are applicable to a facility on the Workday Calendar window in Oracle Shipping Execution.

Oracle Transportation Planning considers shipping and receiving calendars that apply to all the docks in a facility. You define hours of operation at the facility level and these hours of operation apply to all the docks within the facility. For example, the San Francisco facility's hours of operation may be from 8:00 a.m. to 11:00 p.m., while those of receiving docks in the Portland facility may be from 4:00 p.m. to 10:00 p.m. Portland facility's hours of operation for shipping may be from 6:00 a.m. to 2:00 p.m. Hours of

operation may also differ by weekday. For example, hours of operation from Monday to Friday may be from 8:00 a.m. to 6:00 p.m., while hours of operation on Saturday may be from 11:00 a.m. to 4:00 p.m. You can specify hours of operation by defining shifts in the Workday Calendar window.

**Note:** If a calendar is defined with no shifts and is assigned to a facility, then the transportation planning system considers that the facility is not open at all. If a requirement exists for the facility to be operational 24 hours, then you must define one shift from 00:00 to 24:00.

You can also specify if the facility is closed on a specific day or date. For example, a facility in Massachusetts may have Patriot's Day as a non-working day, while facilities elsewhere in the United States may be working that day.

You can associate calendars with shipper, customer, or supplier sites and specify the calendars to be receiving or shipping calendars. To associate calendars with facilities, use the Assign Calendars window.

**Note:** For Oracle Transportation Planning to consider calendars in planning, you must assign the calendars at a site (facility) level for shippers, customers, suppliers, and carriers.

Also, calendars defined for each facility have effectivity dates. The planning engine considers the calendar specified working days and hours of operation during the effective duration. Outside the effective duration, Oracle Transportation Planning assumes that the facility is open 24 hours a day and 7 days a week.

For facilities that do not have any calendar assigned to them, Oracle Transportation Planning assumes that the facility is open 24 hours a day and 7 days a week.

See 'Step 16: Set Up Facilities, page 4-20 for more information on creating facilities.

The following example illustrates how the planning engine considers facility calendars.

Suppose the following:

- Plan start date: 10-JAN-2003
- Plan end date: 14-JAN-2003
- Plan scope includes Facility F1 with a calendar that is effective from 1-JAN-2003 to 12-JAN-2003.

The planning engine functions as follows:

- From 10-JAN-2003 to 12-JAN-2003, the planning engine considers the facility's working days and hours of operation.
- From 13-JAN-2003 to 14-JAN-2003, the planning engine assumes that the facility is

open 24 hours a day and 7 days a week.

### Carrier Pick-Up and Delivery Time Windows

You can define standing appointments for pick-up and delivery operations for specific carriers at a facility. The facility can belong to the shipper company, customer, supplier, or carrier. These pick-up and delivery time windows are for the carrier and facility combination and are not related to earliest and latest available to ship or delivery date and time on an order.

For example, at the Portland facility of customer X, the pick-up and delivery times for carrier XYZ Express are 8:00 a.m. to 9:00 a.m., 12:00 noon to 1:00 p.m., 5:00 p.m. to 6:00 p.m. At the same facility, the pick-up and delivery times for carrier ABC Fleet are 11:00 a.m. to 12:00 noon and from 7:00 p.m. to 8:00 p.m.

When defining a standing appointment on the Assign Calendars window, you must choose Calendar Usage as Carrier and also specify which carrier the appointment is defined for.

**Note:** For Oracle Transportation Planning to consider carrier standing appointments in planning, you must assign the carrier calendar at a site (facility) level for the shipper, customer, supplier, or carrier as is applicable.

## Step 14: Set Up Global Parameters

You specify the following in the Global Parameters window in Oracle Shipping Execution. Use the seeded Manufacturing and Distribution Manager responsibility to access this window.

### Default Units of Measure Classes and Units of Measure

The Units of Measure Classes and the Units of Measure set here are the default units of measure used in Oracle Transportation Planning. See 'Step 24: Set Up Global Preferences, page 5-11 and 'Step 25: Set Up User Preferences, page 5-18 for more information.

For detailed information, refer to *Oracle Order Management Implementation Manual*.

### Global Cost Allocation Parameters

- **Principal Cost Allocation Basis:** You specify the primary limiting capacity measure as either weight or volume. This is an input to the planning engine that the engine uses for cost allocation.
- **Distance Allocation Basis:** You can specify the distance allocation basis as the actual distance traveled or the direct route distance traveled. This distance is used in cost allocation.

- **Stop Cost Allocation Basis:** You can specify the truckload stop allocation method to be based on pick-up stops or delivery stops. The system uses this parameter value to allocate trip costs to deliveries. Planners running pure outbound operations will typically choose to allocate cost over delivery stops, while those running pure inbound operations will choose to allocate cost over pick-up stops.

Note that you can modify the truckload stop allocation method at the individual user level to apply to each plan that the user creates. You can set up user preferences on the User Preferences window in Oracle Transportation Planning using the seeded Transportation Planner responsibility. See 'General User Preferences Setup, page 5-18 for more information. The user preferences override the global preferences.

## Setups on Oracle Transportation Execution

The following sections discuss setup steps you must perform on Oracle Transportation Execution. For all these setups, use the seeded Oracle Transportation Super User responsibility other than where variations are specified.

- 'Step 15: Set Up Lanes and Lane Groups, page 4-20
- 'Step 16: Set Up Facilities, page 4-20
- 'Step 17: Set Up Carrier Commitments, page 4-34
- 'Step 18: Set Up Vehicle Availability, page 4-38
- 'Step 19: Set Up Truckload Distance and Transit Time, page 4-38
- 'Step 20: Set Up Transit Times for Less-than-Truckload and Parcel, page 4-46
- 'Step 21: Set Up Rates, page 4-46
- 'Step 22: Set Up Compatibility Constraints, page 4-66

**Note:** 'Vehicle Types setup, page 4-6, though performed on Oracle Transportation Execution, is described under the Prerequisite Setups in this chapter. This is because Vehicle Types have to be set up before you can assign Vehicle Types to Carriers (assigning vehicle types to carriers is part of setting up Carriers on Oracle Shipping Execution).

Similarly, the 'Regions and Zones setup, page 4-2 that can be performed on Oracle Transportation Execution using bulk load templates (or using the Regions and Zones screen on Oracle Shipping Execution) has been described under the section

Pre-Requisite Setups in this chapter. This is because regions and zones setup is prerequisite to locations, organizations, customer sites, supplier sites, and carrier sites setup for facility auto-creation to be enabled.

## Step 15: Set Up Lanes and Lane Groups

Lanes represent origin-destination pairs that are serviced by a carrier. For example, you can define a lane for carrier X that operates from San Francisco to New York. You can also define Lanes with zones as origin and destination.

Each Lane is attached to information such as carrier freight rates and supported equipment.

You create lanes by completing a spreadsheet template and bulk loading the data into the system. You can download the Services and Schedules template from the Oracle Transportation Execution Bulk Load Data page.

Note that Oracle Transportation Planning ignores any lane schedules specified in Oracle Transportation Execution. The planning engine may create trips that conflict with a lane schedule specified in the transportation execution system. This may result in the transportation execution system generating a warning upon release of the trips from the planning system. If you want to incorporate lane schedules into the transportation plan, you must incorporate them manually in Oracle Transportation Execution, based on the warnings received. If you would rather avoid these warnings, do not specify any lane schedules when you set up lanes.

A Lane Group contains several lanes that are served by a common carrier and mode of transport.

For information on defining lanes and lane groups, see *Oracle Transportation Execution Implementation Manual*.

## Step 16: Set Up Facilities

Companies involved in transportation can include shippers, customers, suppliers, and carriers. These companies may have a combination of facilities associated with them such as receiving locations, shipping locations, consolidation centers, deconsolidation centers, and cross-docking centers. The facilities may also have customer specific or carrier specific tasks and charges associated with them. The different types of docks inside a facility inherit all the properties of the facility.

The following sections discuss considerations and steps required to set up facilities.

For detailed procedures and field descriptions, see *Oracle Transportation Execution Implementation Manual*.

## Creating Facilities

Oracle Transportation Planning supports facility creation for the following trading parties:

- Shippers
- Customers
- Suppliers
- Carriers

Each trading party can have multiple facilities of various types.

**Note:** You must set up organizations, customers, customer sites, suppliers, supplier sites, carriers, and carrier sites before you can create respective facilities.

You can create facilities manually or by using the facility auto-creation routine.

### Facility Auto-Creation

Oracle Transportation Planning supports the automatic creation of facilities for customer sites, supplier sites, and carrier sites as well as shipper organizations. The facility auto-creation routine is activated in either of the following cases:

- A new wsh\_location created due to the entry of a new customer site, carrier site, or a shipping organization.
- A delivery line is identified in Oracle Transportation Execution or Shipping Execution, which does not have an existing entry in wsh\_locations for its Ship-From or Ship-To location.

The facility auto-creation routine has a callable API that builds a batch script to create facility records for all existing wsh\_locations. The facility auto-creation routine eliminates the need for re-entry of the same data for each facility. The default template used to populate the auto-created facility records is shown in 'Facility Auto-Creation Template, page B-1. These default values can be modified manually for each facility.

### Creating Facilities Manually

1. For locations, organizations, customer sites, and carrier sites, run the Import Shipping Locations program in the following scenarios:
  1. If locations, organizations, customer sites, and carrier sites were created before you installed Oracle Transportation Planning
  2. If locations, organizations, customer sites, and carrier sites were created after you installed Oracle Transportation Planning, but before you created Regions

and Zones

The Import Shipping Locations program is available in Oracle Shipping Execution and is accessible using the seeded Manufacturing and Distribution Manager responsibility. Use the following parameter values while running the program:

- Map Regions: Yes
- Location Type: Both
- Create Facilities: Yes

The Import Shipping Locations program creates the location-facility relationship, which allows you to then manually specify the various facility attributes.

- 
2. For supplier sites, the system creates the facility when you load a Purchase Order routing request that involves the supplier site.
3. You can also create a facility manually or modify its attributes by navigating to the Facilities subtab under the Setup tab in Oracle Transportation Execution. To access this page, use the seeded Oracle Transportation Super User responsibility.

**Note:** For cases 1 and 2, the system creates facilities with the default values in the Facility Auto-Creation template. See 'Facility Auto-Creation Template, page B-1 for more information.

## Facility Location

You can specify the facility location on the Create Facility page. You select the company name and address from lists of values. These values are those that you specified while setting up your organizations, carriers, suppliers, or customers. A facility's physical location is specified by the following.

- Facility Code (used as a short name or id)
- Facility Description
- Company Type (Shipper, Carrier, Supplier, Customer)
- Company Name
- Street Address
- City



- State, Province, or Region
- Country
- Postal Code

### Effective Start and End Dates

You specify a facility's effective Start and End Dates on the Create Facility page in Oracle Transportation Execution.

Oracle Transportation Planning uses the effective start and effective end dates only for shipper and carrier facilities that are involved in cross-docking, consolidation, or deconsolidation activities. The effective dates associated with a facility indicate when the facility can or cannot be used as a discretionary routing facility. Oracle Transportation Planning uses these dates when it builds trips and evaluates various pooling point options to route the deliveries through. The planning engine considers only those pool points that are effective for the entire planning horizon duration.

**Note:** The effectivity dates are not applicable to customer and supplier locations. This is because the effectivity dates for a shipper, customer, or supplier facility do not coordinate with the effectivity dates on the underlying hr\_locations, hz\_locations, organizations, customer sites, and supplier sites. A facility appearing as ineffective according to the Facility user interface does not preclude orders from having the facility as ship-to or ship-from facility.

Leaving the effective date fields blank for facilities belonging to customers, suppliers, carriers, or the shipper indicates that the facility is always active.

### Types of Activities at a Facility

You define the types of activities possible at a facility on the Consolidation tab on the Create Facility page in Oracle Transportation Execution.

The following types of activities can take place at a facility:

- Consolidation
- Deconsolidation
- Cross-Docking

For more information on these activities, see 'Load Consolidation Strategies, page 2-10.

**Note:** You can specify consolidation, deconsolidation, or cross-docking activities only for a carrier or a shipper facility, not for a supplier or customer facility.

## Consolidation and Deconsolidation Activities

You can specify the following types of consolidation and deconsolidation activities at a facility:

- Consolidation Activities: If you select the Consolidation Allowed check box, then the planning system will consider various consolidation activities at this facility.
  - Parcel to Less-than-Truckload
  - Parcel to Truckload
  - Less-than-Truckload to Truckload
  - Less-than-Truckload to Less-than-Truckload. For example, a national less-than-truckload carrier may perform the line haul and a regional carrier may perform the local haul.
- Deconsolidation Activities: If you select the Deconsolidation Allowed check box, then the planning system will consider various deconsolidation activities at this facility.
  - Less-than-Truckload to Parcel
  - Truckload to Parcel
  - Truckload to Less-than-Truckload
  - Less-than-Truckload to Less-than-Truckload
- Cross-Docking Activities: In cross-docking scenarios, you can select the allowed modes inbound to and outbound from the facility. If you select the Cross-Docking Allowed check box, then the planning system will consider various cross-docking options at the facility, such as:
  - Allowed Inbound Mode:
    - Parcel
    - Less-than-Truckload
    - Truckload
  - Allowed Outbound Mode:
    - Parcel
    - Less-than-Truckload

- Truckload

### Movements Reserved for Carrier Owning the Facility

A facility can belong to a shipper, customer, supplier, or carrier. Based on the ownership of the facility, the following apply for a consolidation, deconsolidation, or a cross-docking facility.

- **Supplier, Customer, or Shipper Owned Facility:** The facility can be a consolidation, deconsolidation, or cross-docking facility. Any carrier can perform the line haul or the local haul.
- **Carrier Facility:** A carrier may be of the type truckload, less-than-truckload, or parcel or may offer a combination of truckload, less-than-truckload, and parcel services. If a carrier owns a facility, then the carrier typically requires that it be either the line haul carrier or the local haul carrier. For example, if the pool point belongs to a truckload carrier, then the truckload carrier performs the line haul and allows a parcel or less-than-truckload carrier to perform the local haul.

For a carrier facility, you can specify the movements reserved for a carrier as Line haul, Local haul, Both, Either, or None.

The following table presents examples of services at a facility.

Types of Activities Allowed at a Facility	Facility Owner	Service Reserved for itself by Carrier (Facility Owner)
Consolidation: Less-than-Truckload to Truckload	Truckload Carrier	Line Haul  (Local Haul: Less-than-Truckload carriers)
Deconsolidation: Truckload to Parcel	Parcel Carrier	Local Haul  (Line Haul: Truckload Carrier)
Consolidation: Parcel to Less-than-Truckload  Deconsolidation: Less-than-Truckload to Parcel	Less-than-Truckload Carrier	Line Haul

The line haul and the local haul are determined for each delivery on the basis of the distance covered by the delivery's inbound delivery leg to the facility and outbound delivery leg from the facility. The shorter delivery leg, in terms of distance, corresponds to the local haul, while the longer delivery leg can be the line haul.

### Processing Attributes at a Facility

You set up the processing attributes for a facility on the Processing tab on the Create Facility page.

The following sections discuss facility processing attributes.

#### Facility Handling Capacity

You can specify a facility's handling capacity expressed in terms of pieces, pallets, cube, or weight per unit time. For example, the facility handling capacity can be 5000 lbs per hour or 1000 pallets per day.

The capacity is expressed per unit time because it is a rate of throughput and not a storage capacity. The facility handling capacity indicates how much cargo can be put through, into, or out of a facility in a unit of time such as a day or a week.

Oracle Transportation Planning makes the following considerations based on palletized or non-palletized loads scheduled at a facility:

- If you specify the handling capacity at a facility in terms of pieces, weight, or volume and a non-palletized load is scheduled at the facility, then the system considers the pieces, weight, or volume of the load against the facility handling capacity.
- If you specify the handling capacity at a facility in terms of pallets and a palletized load is scheduled at the facility, then the planning engine considers the pallets on the load against the facility handling capacity.
- If you specify the handling capacity at a facility in terms of pieces, weight, or volume (not pallets) and a palletized load is scheduled at the facility, then the system considers the pieces, weight, or volume of the palletized load against the facility handling capacity.
- If you specify the handling capacity at a facility in terms of pallets and a non-palletized load is scheduled at the facility, then the load does not consume any capacity of the facility. This means that the Oracle Transportation Planning engine does not estimate the number of pallets required for this load or consider it against the facility capacity.

The following table shows the facility handling capacity consumption considered by planning engine

Facility Handling Capacity Specification	Nature of Load Scheduled at Facility	Facility Capacity Consumption as Considered by Planning Engine
--	--------------------------------------	--

Facility Handling Capacity Specification	Nature of Load Scheduled at Facility	Facility Capacity Consumption as Considered by Planning Engine
Pieces, Weight, Volume	Non-Palletized	Pieces, Weight, Volume of load
Pieces, Weight, Volume	Palletized	Pieces, Weight, Volume of palletized load
Pallets	Non-Palletized	No facility capacity is consumed
Pallets	Palletized	Pallets on the load

**Note:** If you specify the handling capacity for any time basis that is less than a day, for example, per hour or per minute, the planning engine converts this rate to a rate per day and applies the handling capacity on that basis.

These facility handling capacity constraints are enforced only when the facility is being considered as a consolidation, deconsolidation, or cross-docking point. Orders with a facility specified as the ship-to or ship-from location are always directed to or from the facility, as the case may be, irrespective of facility handling capacity consumed. These orders do, however, consume facility handling capacity. This may influence other shipments, keeping them from being routed through the facility.

### Shipment Flow-Through Time

You can specify the flow-through time for a shipment at a facility. For example, the flow-through time for a shipment to be moved from the unloading zone to the loading zone at a cross-docking center can be 2 hours.

### Processing Rates

You can specify the loading and unloading rates at a facility expressed in terms of shipments, pallets, cubic units, or weight per unit time:

- Loading and unloading rates for palletized shipments: expressed as pieces, cubic units, weight, or pallets per unit time
- Loading and unloading rates for non-palletized shipments: expressed as pieces, cubic units, or weight per unit time

For facilities that are auto-created, these values default from the Global Preferences set up in Oracle Transportation Planning. See 'Step 24: Set Up Global Preferences, page 5-

for more information.

The loading and unloading rates do not vary from dock to dock in a facility and hence are facility parameters. If a consignment to the facility consists of a palletized load, then the loading or unloading rate specified for a palletized shipment in that facility is used. If the consignment is non-palletized, the non-palletized rate is used.

**Note:** It is important to define non-zero processing rates for a facility. If a facility's processing rates are not defined, then the planning process will assume that zero time is required to load or unload deliveries at the facility. A planned trip with stops that have zero load/unload time may fail to release due to validations in the release process.

### Charges Associated with a Facility

A facility may offer services such as loading, unloading, assisted loading, assisted unloading, and handling. The facility then charges the shipper with associated service fee.

A facility offers the same service to all carriers or shippers. For example, if the loading protocol at a facility is Joint, then it is implied that all carriers or shippers are offered assisted loading services at the facility.

You can specify the loading charges, unloading charges, and the facility handling charges separately at a facility. Handling charges include cross-docking charges or charges for any additional services provided at the facility. Note that loading and unloading charges apply only to truckload mode, while handling charges apply to all modes; truckload, less-than-truckload, and parcel.

The planning engine uses the following method to calculate facility charges:

Facility Charges = Facility Loading Charge + Facility Unloading Charge + Facility Handling Charge

The charges apply as follows:

- If a delivery is dropped off at the facility, then unloading charges and handling charges apply. Unloading charges apply only for truckload mode.
- If a delivery is picked up at the facility, then loading charges and handling charges apply. Loading charges apply only for truckload mode.
- If a delivery is cross-docked at the facility, then unloading, handling and loading charges apply. Loading and unloading charges apply only for truckloads.

You specify facility charges by completing a spreadsheet template and then bulk loading the data into the system. The Facility Charges template is available for download on the Oracle Transportation Execution Bulk Load Data page. For more information, refer to *Oracle Transportation Execution Implementation Manual*.

### Loading Protocol

You can define the loading protocol at the facility level as follows. The loading protocol applies to both loading and unloading activities at a facility:

- **Carrier:** The carrier's truck driver does the loading or unloading. In this case, the planning engine considers the loading or unloading charge in the carrier's truckload rate only and the facility handling charges, if any, that you specify are applied. The planning engine ignores the facility loading and unloading charges.
- **Facility:** The facility personnel perform the loading or unloading activity. In this case, facility loading, unloading, and handling charges apply. Carrier loading or unloading charges are not applicable.
- **Joint:** In this case, the truck driver assists the facility's personnel in loading or unloading. This results in two cost components: assisted loading and unloading charge at the facility and assisted loading and unloading charge as specified in the carrier's rate contract. In addition, handling charges at the facility also apply.

### **Loading and Unloading Charges**

Loading charges include the cost for loading at a facility and unloading charges include charges for unloading at a facility. You can define loading and unloading charges as any one of the following:

- **Flat fee per load stop**  
Loading or unloading charge = flat fee for loading or unloading one truck at the facility
- **Per unit weight**  
Loading or unloading charge = loading or unloading charge per unit weight \* shipment weight
- **Per unit volume**  
Loading or unloading charge = loading or unloading charge per unit volume \* shipment volume
- **Per piece**  
Loading or unloading charge = number of pieces \* loading or unloading charge per piece
- **Per pallet**  
Loading or unloading charge = number of pallets \* loading or unloading charge per pallet
- In addition, a minimum loading or unloading charge might apply.

Loading or unloading charge is the greater of the minimum loading or unloading charge and the calculated actual loading or unloading charge.

These charges vary based on who loads or unloads the truck. You can specify the loading protocol by facility. The loading protocol can be Carrier, Facility, or Joint. See 'Loading Protocol, page 4-28 for more information.

The planning system allocates loading or unloading charges to the cargo being loaded or unloaded at the facility.

### **Handling Charges**

In addition to loading and unloading charges, extra handling charges may be associated with a consolidation, deconsolidation, or cross-docking facility. These include charges after unloading and before loading, such as transport from the first truck to the second truck. For example, the receiving dock and the shipping dock may be on different floors or at different ends of the facility.

You can define the handling charges at a facility as one of the following:

- Flat fee (per load per stop)

- Per unit weight

Handling charge = shipment weight \* handling charge per unit weight

- Per unit volume

Handling charge = shipment volume \* handling charge per unit volume

- Per piece

Handling charge = number of pieces \* handling charge per piece

- Per pallet

Handling charge = number of pallets \* handling charge per pallet)

For unit-based handling charges (weight, volume, pallets, or pieces) in a consolidation, deconsolidation, or cross-docking facility, the shipper does not have to pay individually for loading and unloading of same shipments.

The assessment and allocation of facility handling charges depends upon the type of activity at the facility: origination or termination, consolidation, deconsolidation, or cross-docking.

For details on facility handling charge allocation, refer to 'Key Performance Indicators, page 13-1.

### **Facility Dock Specifications**

You can specify the total number of vehicle docks at a facility.

### **Stacked Pallet Handling**

You can specify whether a facility can handle stacked pallets or not. If the facility cannot handle stacked pallets, then the trips that have a stop at this facility must have only the number of pallets that can fit in a single layer.



## Facility Vehicle Requirements

You specify the vehicle requirements for a facility on the Vehicle Requirements tab on the Create Facility page in Oracle Transportation Execution.

The following sections discuss the vehicle requirements you can specify for a facility.

### Maximum Allowable Vehicle Dimensions

You can specify the maximum allowable vehicle exterior length and vehicle exterior height by facility. For example, a facility where the loading dock faces a narrow alley may not accommodate a particularly long trailer. Specify the maximum length, height, and width of the vehicle that can be handled at a facility. You must use the same dimension unit of measure for the length, width, and height attributes.

### Drop-Trailer Arrangement

You can specify whether a facility has drop-trailer arrangements with carriers. A drop-trailer arrangement means that a specific carrier can leave a trailer at the facility for loading or unloading. This is advantageous in cases where a carrier drops a loaded trailer at the facility and picks up an empty trailer from the previous trip (or vice versa), thus reducing any waiting or unloading time at the facility.

You can specify drop trailer arrangements for any facility type. The facility can be that of a host company, supplier, customer, or carrier. Regardless of the facility type or its role in moving a delivery, a drop trailer arrangement only implies that any stop involved in the drop-trailer arrangement has to be the first or last stop. Otherwise the trip cannot gain the advantage of the benefits of shorter dwell time, as the drop-trailer arrangement is not used in that case.

For example, consider a trip that leaves loading point A for destination points B and C. If facility B has a drop trailer arrangement with this carrier, the trailer is unhitched and left behind at B. If the trip visits B before C, then the goods for C are left at B while the trip would proceed with an empty trailer to destination point C. This is clearly not feasible.

The following apply to trips with stops at facilities that have drop trailer arrangements:

- Drop trailer arrangements apply to the first or last stop of a truckload trip.
- A trip's stop time reflects the amount of time required to load or unload the dropped trailer since the trailer needs to be loaded or unloaded regardless of the drop trailer arrangement.
- At stops with drop trailer arrangements, the system does not count time for loading or unloading as carrier duty time.
- The planning system ignores facility calendars for shipping or receiving at stops with drop trailer arrangements.
- At stops with drop trailer arrangements, the system ignores carrier appointments.

- At stops with drop trailer arrangements, the system ignores dock capacity constraints.
- The system ignores early delivery window constraints for a drop trailer stop if it is the last stop.

Drop trailer arrangements affect only how stops are ordered on a trip and not how trips can be ordered in a continuous move.

While a facility with a drop trailer arrangement must be the first or last stop on a trip assigned to an involved carrier, the drop trailer arrangement has no impact on the ordering of continuous moves. Whether a trip ends with an empty trailer (no drop trailer arrangement) or the exchange of the loaded trailer for an empty one with drop trailer arrangement, the effect is the same: the driver has an empty trailer. The carrier is thus staged for an empty deadhead leg to another trip's origin point. At this point, again, whether the empty trailer is loaded up or exchanged for one already loaded, the effect is the same.

### **General Facility Information**

The system automatically populates all the fields on the General tab on the Create Facility page when you specify facility code, company name, and address. You specify contact information including Facility Contact Person and Contact Number when you set up the Carrier sites, Supplier sites, Customer sites, or Organizations. The system obtains geographic information including Latitude, Longitude, Standard Time Zone Code, and Summer Time Zone Code from the map and time zone data loaded into the system. See 'Step 10: Set Up Map and Time Zone Data, page 4-5 for more information. You define workday calendars and assign them to facilities as explained in 'Step 13: Define Calendars, page 4-16.

Note that the latitude and longitude, time zones, facility contact person, and contact number information are populated automatically on the General tab on the Create Facility page when you select your company name and address.

### **Time Zone Codes**

You must specify both Standard Time Zone Code and Summer (Daylight Savings) Time Zone Code for a facility. For example, a facility in Redwood Shores, California, has PST as the Standard Time Zone Code and PDT as the Summer Time Zone Code. The Standard Time Zone Code field is a non-null field, but the Summer Time Zone Code field can be null. In the case of a facility where Summer Time is observed, but the Summer Time Zone Code is null, the system continues to use the Standard Time Zone code for the facility.

The system automatically populates both fields when the facility location is created, but you can edit them as necessary. Oracle Transportation Planning performs a one-to-one mapping of time zone offsets to codes. If the system assigns an offset of +1 to CET (Central European Time), then CET is assigned by default to all locations with an offset of +1. You can manually change this to suit any other location.

## Time Zone Codes and Offsets

The process of identifying a location's time zone produces the time zone offset and the time zone code and enables correlation to data in the Oracle Applications FND\_TIMEZONES\_B table.

If the time zone identification process does not produce a time zone code, but only the offset, the time zone code is assigned based on a table of offsets and codes allowing only one unique code per offset. This table applies at the user level, enabling each user to define their own mapping of codes to offsets. For example, one user may want to see times at offset GMT+1 as Central European Time while another user may want to see times at the same offset as West African Time. The table contains a few seeded values for offset and code. You can change the code for any offset and also add new offsets to this table.

**Note:** You specify the facility working days and hours of operation using the facility calendar. For facilities that do not have any calendar assigned to them, Oracle Transportation Planning assumes that the facility is open 24 hours and 7 days a week.

Also, calendars defined for each facility have effectivity dates. The planning engine considers the calendar specified working days and hours of operation during the effective duration. Outside the effective duration, the system assumes that the facility is open 24 hours a day and 7 days a week.

## Facility Compatibilities

You can specify the following compatibility constraints at a facility level:

1. Host company facility-Facility
2. Customer-Facility
3. Supplier-Facility
4. Region-Facility
5. Facility-Vehicle
6. Facility-Mode
7. Facility-Carrier
8. Item-Facility

For more information on setting up facility compatibility constraints, see 'Step 22: Set Up Compatibility Constraints, page 4-66.

## Step 17: Set Up Carrier Commitments

A transportation contract is an agreement between a transportation service provider and a shipper. The transportation provider agrees to perform a service at a negotiated price and the shipper agrees to commit a specified amount of business to the carrier. Oracle Transportation Planning considers commitments to carriers during the process of mode and carrier selection.

Carrier commitments represent the minimum carrier utilization commitments that the shipper makes to carriers. A transportation planner can define the shipper-carrier commitments in Oracle Transportation Execution in the following ways:

- Trips based commitment: For example, 20 trips daily
- Weight based commitment: For example, 2000 lbs weekly
- Spend based commitment: For example, \$2,000.00 in monthly shipping spend

You can express commitments as a percentage of total trips, weight, or spend.

Typically, for truckload carriers, the contractual commitments are in terms of number of trips over a period of time; for example, 20 trips per day or in terms of spend; for example, \$4000 per month. Less-than-truckload and parcel carriers typically have a weight based or spend based contractual commitment; for example, 10,000 lbs per month or \$5000 per quarter.

### Defining Carrier Commitment Rules

You can define carrier commitments in terms of rules. You can assign a group of such rules to a carrier commitment set. You can define multiple carrier commitment rule sets, but can use only one rule set as a constraint for a given plan. You can change the carrier commitment rule set for a specific plan on the corresponding Plan Options window. See 'Specifying Constraints and Penalties, page 6-24 for more information.

Define your commitment rules and commitment sets on the Carrier Selection tab in Oracle Transportation Execution. To access this tab, use the seeded Oracle Transportation Super User responsibility. For detailed procedures, see *Oracle Transportation Execution Implementation Manual*.

A carrier commitment represents a commitment to a carrier of a certain amount or percentage of the business in a lane and mode.

You can define carrier commitment rules by specifying the following:

- Rule Name: The rule name is an optional field. You can specify an alphanumeric name. The rule name must be unique within a carrier selection planning rule set, that is, you cannot use the same rule name for another rule in the same set.
- Lane or Lane Group: You can define carrier commitments by lane. A lane represents the transportation services offered between an origin and a destination. In addition,

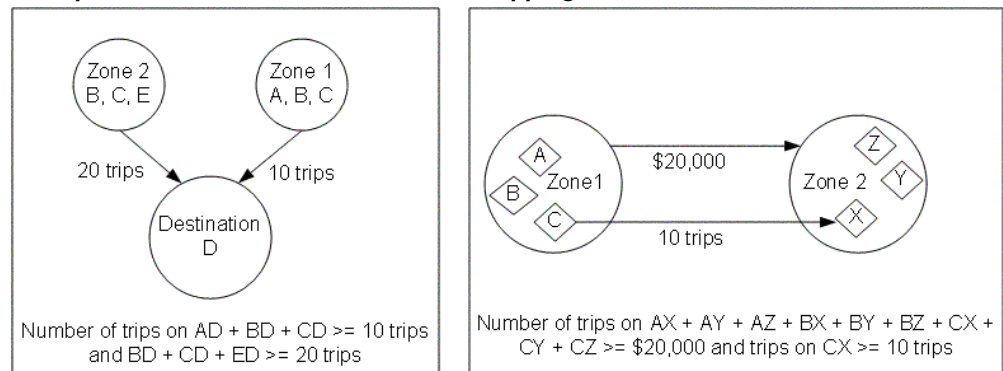
you can define commitments by lane groups. For example, San Francisco-Los Angeles, San Jose-Oakland, and San Francisco-Las Vegas can constitute one lane group. The shipper can have a commitment with a carrier for assigning a minimum spend of \$12,000 per quarter over these lanes.

In Oracle Transportation Execution, the lanes are tied to a specific carrier and service. By choosing the lane, the planner can also select the carrier and by implication the mode as well. In some cases, the carrier commitments may overlap between the different lanes. The planning engine considers these overlaps while assigning carriers to trips.

The following example explains how the planning engine handles carrier commitment overlap between lanes. 'Example of Carrier Commitments for Overlapping lanes, page 4-35 illustrates this example.

Zone 1 comprises of regions A, B, and C and Zone 2 comprises of regions B, C, and E.

#### **Example of Carrier Commitments for Overlapping lanes**



- A trip commitment of 10 trips from Zone 1 to destination D and a trip commitment of 20 trips from Zone 2 to destination D implies the following:
  - Number of trips on AD + Number of trips on BD + Number of trips on CD must be greater than or equal to 10 trips
  - Number of trips on BD + Number of trips on CD + Number of trips on ED must be greater than or equal to 20 trips

Now consider a spend commitment of \$20,000 to a carrier for the lane Zone 1 to Zone 2 and a trip commitment of 10 trips for lane CX. This implies the following:

- Spend on AX + spend on AY + spend on AZ + spend on BX + spend on BY + spend on BZ + spend on CX + spend on CY + spend on CZ must be greater than or equal to \$20,000

- Number of trips on CX must be greater than or equal to 10 trips
- Commitment Basis: Commitment Basis indicates whether the commitment to a carrier is weight based, spend based, or trip based. The allowed selections differ by the mode you selected as follows:
  - Truckload: trip or spend based
    - If the commitment is trip based, then even if the trip is a multi-stop trip, it counts as one trip on that lane.
    - If the commitment is spend based, then the spend is summed across the different legs. Say, for example, a truckload trip on a lane A-B consists of two legs: A-C and C-B; A-C costs \$1000 and C-B costs \$500. Then spend is summed for both the legs on the lane and \$1500 is counted against the commitment on lane A-B.
  - Less-than-Truckload and Parcel: weight or spend based

- Absolute Value: Specify this value if you have an absolute commitment to the carrier based on spend, weight, or trips.

For cases where the absolute commitment is less than the total traffic on the lane, the planning engine assigns trips to the carriers up to the specified commitment. The system selects the carriers for the remaining trips on a least cost basis.

- Percentage Value: You may want to specify a percentage of the total weight, spend, or trips for a carrier. The planning system converts the percentage commitments to absolute values during the plan run. For example, if you have a commitment to give carrier A 70% of all the trips on a certain lane and 100 trips are present in the plan run, the system interprets the rule as 70 trips are committed to carrier A on the lane. Similarly, if 50% of the weight is committed to carrier B on a certain lane and the total weight transported on the lane is 10000 lbs, then this rule is interpreted as 5000 lbs are committed to carrier B on this lane. Note that Oracle Transportation Planning does not enforce any user interface validation for a percentage based commitment to not exceed 100% for a given lane. You can specify rules on the basis of your business processes.

For cases where the total percentage commitment is less than 100%, the planning engine assigns trips to the carriers up to the specified percentage on the commitment and chooses the carriers for the remaining trips on a least cost basis.

- Rank: Use this field to specify the relative importance of the commitments to different carriers on the same lane and mode. This is a mandatory field. Every rule must have a unique rank. Ranks are used for conflict resolution between different commitments.

- **Commitment Duration:** Commitment Duration indicates the period of time over which the commitment is applicable. This includes per day, week, month, quarter, half-year, or year. The system assumes the following based on the time duration you select:
  - **Week:** The week is from a Monday to Sunday.
  - **Month:** This is the calendar month. For example, January 1 to January 31.
  - **Quarter:** These are quarters based on a calendar year from January to December. The four quarters used by the system are:
    - January, February, March
    - April, May, June
    - July, August, September
    - October, November, December

The relevant quarter is identified based on the planning horizon start and end dates.
  - **Half-Year:** The two half-years used by the system are January through June, and July through December. The relevant half-year is identified based on the planning horizon start and end dates.
  - **Year:** The year is from January 1 to December 31. The relevant year is identified based on the planning horizon start and end dates.
- **Effective Start and End Dates:** This indicates the duration over which the rule is valid. The rule applies to the trips departing from the first origin within the specified date range. For example, rule 123 for the lane San Francisco-Chicago is valid for all the trips leaving from San Francisco in the period of January 10 to March 10, 2003.

Note that the planning engine pro-rates a commitment based on the effective start and end dates, and the duration chosen. For example, consider rule 123 that has a monthly commitment of 10,000 lbs to XYZ Carrier with an effective start date of 10-Jan-2003 and an effective end date of 10-Mar-2003. In this case, the planning engine pro-rates the commitment of 10000 lbs per month. The planning engine considers 31 days in January, 28 days in February, and 31 days in March. This translates to having a commitment of 6775 lbs from 10-Jan-2003 to 31-Jan-2003, 10,000 lbs from 1-Feb-2003 to 28-Feb-2003 and 3225 lbs from 1-Mar-2003 to 10-Mar-2003.

To understand the behavior of the planning engine when carrier commitments are specified, see 'Planning with Carrier Commitments, page F-1.

For information on resolving carrier commitment conflicts, see 'Resolving Carrier Commitment Conflicts, page G-1.

## Step 18: Set Up Vehicle Availability

Vehicle availability is used to indicate the number of vehicles of a certain Vehicle Type that are available to serve a lane or lane group. You can specify vehicle availability only for truckload carriers. Vehicle Types must be set up and assigned to carriers before you can define vehicle availability.

Vehicle Availability is represented by the number of vehicle instances of specific Vehicle Types that are available at a given frequency (weekly, monthly, or yearly) on specific lanes or lane groups during a specific time period. For example, Carrier X has two 53 ft dry vans that are available on a daily basis on the lane San Francisco-New York and this is effective from January 1 through January 31.

You also have the flexibility to define the availability of a vehicle type across different time periods. For example, on the lane Atlanta-Houston, Carrier Y has two 53 ft dry vans for the period January 1-January 31, and three 53 ft dry vans for the period February 1-February 28.

Vehicle availability is strictly the number of vehicles available per time duration. For example, in the lane Sacramento-Fresno, the carrier may operate five trips in one day with the same vehicle. In this case, vehicle availability must be defined as 5, not 1.

**Note:** If you do not specify vehicle availability, Oracle Transportation Planning considers unlimited capacity for that carrier, vehicle type, and lane or lane group.

Specify vehicle availability for a selected lane or lane group on the Specify Vehicle Availability page in Oracle Transportation Execution.

For detailed procedures and field descriptions, refer to *Oracle Transportation Execution Implementation Manual*.

## Step 19: Set Up Truckload Distance and Transit Time

### Truckload Distance and Transit Time With Distance Software

The transportation execution system requires an interface with a distance determining engine to calculate truckload rates that are distance based. The transportation planning system requires an interface with a distance engine for distances and transit times required for truckload routing. For consistency in truckload routing and pricing, both transportation execution and planning systems must interface with the same distance engine.

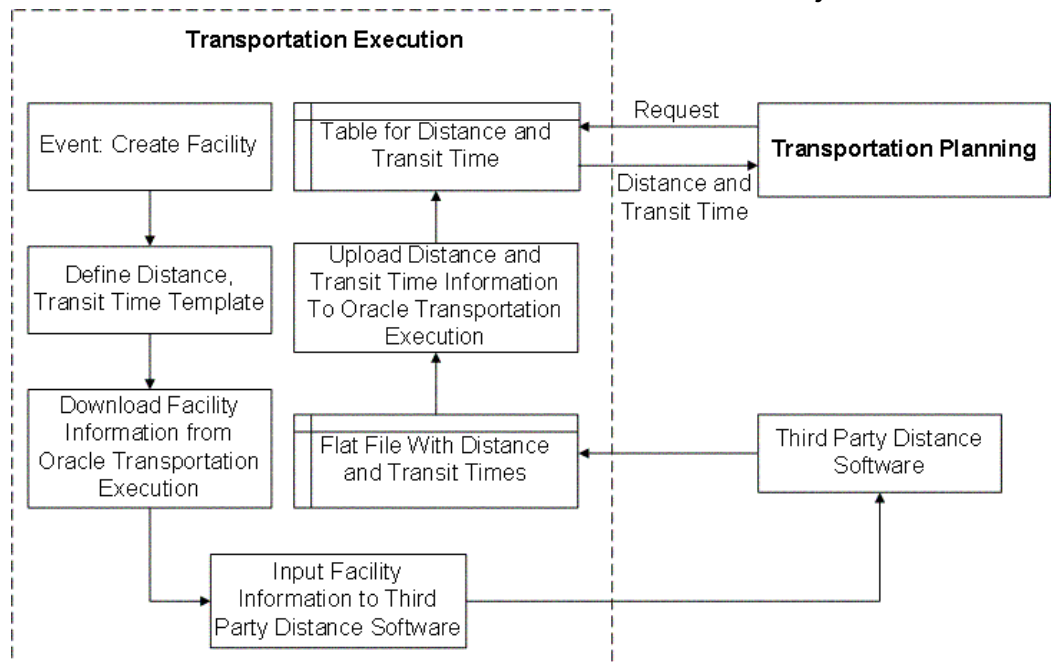
**Note:** The transportation execution and planning systems can obtain



distance and transit time approximations even in the absence of a distance determining engine. For more information, see 'Truckload Distance and Transit Time Without Distance Determining Software, page 4-45.

'Distance and Transit Time Determination for Truckload With Third Party Distance Software, page 4-39 shows the interaction between the transportation execution system, planning system, and the distance determining software.

***Distance and Transit Time Determination for Truckload With Third Party Distance Software***



The distance and transit times information exchange between the distance determining software and the transportation execution system is accomplished as follows:

1. Install the third party distance software as a separate application.
2. When a new facility is created in Oracle Transportation Execution, download the facility information using the distance and transit time template.
3. Load the facility information into the third party distance software.
4. The distance determining software furnishes distance and transit time information for the specified origin-destination pairs in the form of a data file.
5. Upload the new data file containing origin-destination pairs and corresponding distance and transit times to Oracle Transportation Execution. The table storing distance and transit time information is updated with distances and transit times

for all possible origin-destination pairs involving the new facility.

**Note:** The system updates the distance and transit time information for a facility and other facility combinations only if you have selected the Include Facility in Mileage Calculation flag for that facility. This check box is available on the Create Facility or Update Facility page in Oracle Transportation Execution. This check box is selected by default depending on the value specified on the Global Shipping Parameters window. For example, if in the Facility Mileage Calculation Defaults region of the Global Shipping Parameters window, you select the Customer check box only, then every time a new customer facility is created, that facility will have the Include Facility for Mileage flag checked.

You can limit the combinations of origin-destination pairs for which the distance and transit time information is populated by specifying the sites for which you require the information.

The interface between Oracle Transportation Planning (and Transportation Execution) and external distance determination software is accomplished by using the external software to populate a distance table. The distance and transit time information stored in the distance table always take precedence when Transportation Planning captures the distance and transit time between two locations. If Transportation Planning finds the distance and transit time between two locations in the distance table, this data is used. If not, the latitudes and longitudes of the two locations are used to calculate the approximate distance and the average speed is used to calculate from this the approximate transit time. The following two profile options control the level of specificity at which the distance determining software populates the distances in the distance table and the level at which the distance is captured by the planning engine.

- FTE: Distance Level: The distance-determining engine populates distances in the distance table at the level specified by this profile. The default value specified for this profile is City.
- MST: Distance Level: This profile determines the level at which the transportation planning engine captures distance from the mileage table. The default value specified for this profile is City.

The following section describes how you can create your own distance and transit time template, download it with origin-destination information, and then upload the template with date and transit time information.

### Distance and Transit Time Template

Oracle Transportation Execution enables you to create your own templates for data download and upload. After a template has been created, you can search for and

retrieve the template at any time.

### Creating a New Template

To create a new template, use the following procedure:

1. Select Manage Templates under Distance and Transit Times on the side navigation menu on the Setup (Bulkload) tab in Oracle Transportation Execution.
2. Click Create. The Create Template page opens.
3. Enter Template Header information including Template Name and Description.
4. In the Column Description region, specify how your data file columns must appear.
  1. In the Sequence fields, select the order in which you want your Origin, Destination, Return Distance, and Return Time columns to appear in the data file. Different distance determining engines may require different sequences.
  2. In the Starting File Position and Length fields, indicate the starting positions and the character string length for Origin, Destination, Return Distance, and Return Time. The Starting File Position value must be an integer greater than 1. In the Post Column Delimiter fields, specify the delimiter you want to use to separate your columns. The following example explains the Starting File Position and Length field values:

Consider that the Origin is sequenced to be the first column, that is, Sequence = 1. If you specify the File Starting Position for Origin as 1, the Length of character string for origin as 40, and the Post Column Delimiter to be a comma, then the Starting File Position for the Destination, if sequenced as 2, must be 42. This is because the character string length for origin = 40 and the character space for delimiter = 1 implies that the second (Destination) column can begin only at position 42. If the Length for Destination is specified as 50, the Starting File Position for the column sequenced as 3; for example, Return Distance, must be populated with the value 93. This is because  $40 + 1 + 50 + 1 = 92$ , which implies the next column must start at 93. If the Length for column 3 is specified as 20, column 4; for example, Return Time, must have a Starting File Position of 114.
5. In the Origin and Destination Attributes region, specify the origin and destination attributes and the sequence in which these attributes must appear in the data file. Note that the attributes and sequence you specify here apply to both origin and destination. You cannot specify separate attribute requirements or sequences for origin and destination.
  1. Use the Select check boxes to specify the origin and destination attributes that you want included in the data file.
  2. In the Sequence fields, specify the order in which the attributes must be

arranged in the data file.

3. Specify the length of the character strings for each selected attribute in the Length fields.
4. Select the delimiter that must separate the origin and destination attributes in the Post Attribute Delimiter fields. For example, if you select Postal Code and Country as your attributes with sequence 1 and 2 respectively, and you select a delimiter, such as a comma, then the origin and destination attributes on the data file will appear in the form Postal Code, Country.

Note that the sum of the values of the character string lengths of all the selected attributes plus the number of post attribute delimiters must not exceed the minimum of the Origin and Destination Length values specified in the Column Description region.

6. In the Return Attributes region, you specify whether you want to upload Distance information only, Transit Time information only, or both by selecting the corresponding check boxes. You also specify the units of measure in which data must be obtained and uploaded back to the transportation execution system.
  1. To obtain and upload distance information, select the check box under Distance.
  2. In the Distance Unit field, specify the unit of measure in which Oracle Transportation Execution must interpret the distance values that will be uploaded.
  3. To obtain and upload transit time information, select the check box under Transit Time.
  4. In the Return Time format field, select the format in which you want the transit time from the distance determining software. For example, Hours, Hours: Minutes, Minutes.
  5. In the Save Return Time Value as field, select the unit of measure in which Oracle Transportation Execution must store the transit time values irrespective of the format in which they are obtained from the distance engine.
7. Click Apply to save the template.

You can now proceed to download the origin and destination information from the transportation execution system using the template. The origin and destination information in the data file appears in the format you specified in the template.

### **Downloading Origin-Destination Data**

To download origin and destination data from the transportation execution system, use

the following procedure:

1. From the side navigation menu on the Manage Templates page in Oracle Transportation Execution, select Download. This opens the Download Origin and Destination Pair Data to File page.
2. Use the Search (Template Name) functionality to retrieve the template you want to use to download data.
3. Select the template in the Results region.
4. In the Origin Download Options and Destination Download Options regions, specify the facility or facilities for which to download origin-destination pairs and obtain distance and transit time information.

1. To download data for a specific facility as origin or as destination, select the Facility radio button and then select the facility from the list of values.

The resulting downloaded data file, when input to the distance determining engine, obtains distance and transit time information for the facility selected as origin or as destination. Note that both distance and transit time information are obtained if you selected both Distance and Transit Time under Return Attributes in the selected template.

2. To download data for facilities in a specific region as origins or destinations, select the Facilities in Region radio button. Then select the region from the list of values. This downloaded data file, when input to the distance engine obtains distance and transit time information for all facilities in the selected region as origins or as destinations.
3. To download origin and destination data and obtain distance and transit time data for all eligible facilities, select the All Eligible Facilities radio button. This downloaded file, when input to the distance engine, obtains distance and transit times for all facilities.

5. In the Other Download Options region, you may choose to download origin-destination pairs only for those facilities for which distance and transit times have not been determined. You can also specify the data file extension and choose whether or not to generate a log file for the download.
  1. Select the All Facilities without Distance or Transit Time Data check box if you want to download origin-destination pairs for only such facilities. The resulting downloaded data file, when input to the distance engine, obtains distance and transit time information for only those facilities for which this information has not been previously determined. You may have determined distance and transit times for other facilities through an earlier download of origin-destination pairs and upload of distance and transit time information obtained from the distance engine.

For example, consider three facilities A, B, and C. Suppose that C is a new facility created in Oracle Transportation Execution. Also, suppose that distance and transit times for facilities A and B have already been determined through an earlier download of origin and destination data and upload of distance and transit time of the same template. Choosing the All Eligible Facilities option obtains distance and transit time information for facilities A, B, and C. Instead, if you choose the All Facilities without Distance or Transit Time Data option, the download and upload procedure fetches distance and transit time information only for facility C.

2. Enter the file extension to be used for the data file; for example, txt.
3. To generate a log file for the download, select Debug. Note that selecting the debug check box may increase the time required for download. However, if you do not select the Debug option, the system will not generate a log file and you may not be able to identify errors.
6. Click Submit to download the origin-destination data file.

The downloaded data file is input to the distance determining engine and distance and transit times obtained. The resulting data file is in the format specified in the downloaded template and contains the origin-destination pairs with the distance and transit time information. You can upload this data file back into Oracle Transportation Execution.

Note that both distance and transit time information are obtained only if you selected both Distance and Transit Time under Return Attributes in the selected template. If you selected only one of Distance or Transit Time in the Return Attributes section, only the selected information type, distance or transit time, is obtained from the distance engine.

### **Uploading Distance and Transit Time Data**

To upload the data file, which now contains the distance and transit time information, use the following procedure:

1. From the side navigation menu on the Manage Templates page in Oracle Transportation Execution, select Upload. The Bulk Load Data page opens.
2. In the Choose File to Upload field, enter the data file name. Note that the file you upload must have the same name as the template you downloaded.
3. Select Enable Debug to generate a log file for the upload. Selecting this option increases the time required for upload, but provides a means to identify and rectify errors in the data.
4. Click Upload File to begin the upload.

### **Truckload Distance and Transit Time Without Distance Determining Software**

The following sections explain how distance and transit times for truckloads are determined when you have not installed a distance determining software.

Oracle Transportation Planning generates approximations for truckload distance and transit time in two situations:

1. No distance determining engine is installed. Indicate this (Yes or No) using the profile option MST: Mileage engine is available.
2. A distance engine is installed but no data appears in the distance and transit time table for a specific origin-destination pair being investigated. The transportation planning system generates an audit exception to alert you to add the needed data, but the engine continues working with an approximation in the interim.

Oracle Transportation Planning uses approximations based on Euclidean distance.

### **Calculating Euclidean Distance**

The Euclidean distance in miles between two points measured on the surface of the earth, also called the great circle distance, may be approximated using the following formula:

$$D = 69.075 * 180/p * (\text{ACOS}(\text{SIN}(p/180*\text{lat}_1) * \text{SIN}(p/180*\text{lat}_2)) + (\text{COS}(p/180*\text{lat}_1) * \text{COS}(p/180*\text{lat}_2) * \text{COS}(p/180*\text{ABS}(\text{long}_1 - \text{long}_2))))$$

where lat\_1, long\_1, lat\_2, and long\_2 are the latitudes and longitudes of the two points (in degrees) and p is the circle constant 3.1416. The two longitudes must be in a consistent linear reference system. Because the SIN (sine) and COS (cosine) functions are symmetric about the origin, the hemisphere of the latitudes has no impact on the calculation.

The planning engine calculates the Euclidean distance based on a fixed unit of measure, which is the Mile. The Mile unit of measure for distance must be set up in Oracle Shipping Execution. You must specify the conversion ratio between the unit of measure selected in your User Preferences and the unit of measure of Mile using the profile option MST: Internal Distance UOM in Mile, so that your plan's distance values correspond to the unit of measure specified in your User Preferences.

### **Estimating Highway Distance from Euclidean Distance**

The actual highway distance may be approximated by increasing the Euclidean distance by a multiplicative constant.

$$\text{Estimated highway distance} = (1 + K) * \text{Euclidean distance}$$

For example, empirical observation has shown that 0.21 is an appropriate constant for distances within Swedish towns. In the United States, the multiplier is about 0.15 in an east-west direction and 0.21 in a north-south direction. The greatest deviations occur in short distances.

In Oracle Transportation Planning, this constant K is a value you can set up in the

Global Shipping Parameters window. Enter the value of the empirical constant in the Highway Distance Empirical Constant field on the Transportation tab in the Global Shipping Parameters window. You can access the Global Shipping Parameters window using the seeded Manufacturing and Distribution Manager responsibility.

### **Estimating Driving Time**

Oracle Transportation Planning incorporates the method of using one average speed, regardless of distance, to estimate transit times. The average speed is also specified on the Global Shipping Parameters window. Enter the value for the average driving speed in the Average Highway Speed field on the Transportation tab. This value is seeded to 50 miles per hour, which is a robust value for inter-city trips in the United States. You can change this default value as is applicable.

## **Step 20: Set Up Transit Times for Less-than-Truckload and Parcel**

Specify the transit time for less-than-truckload and parcel carriers in the Transit Times window in Oracle Shipping Execution. You can access this window using the seeded Manufacturing and Distribution Manager responsibility. Select Shipment Transit Times from the Setup menu for Freight Carriers under Shipping. You can also access the Transit Times window by selecting Transit Times from the Regions and Zones setup menu in Oracle Shipping Execution.

In the Transit Times window, select Origin and Destination Types, such as Internal Location, External Location, Region, or Zone. Then select origin and destination pairs for which you want to specify transit time. You can then associate the selected origin-destination pair with the less-than-truckload and parcel carriers who service that origin-destination pair. You must manually input the transit time required for that carrier and service to traverse the selected origin-destination pair.

Transit times can be specified at a granular level, such as exact address to exact address or at a higher level, such as region to region or zone to zone.

For more information, refer to *Oracle Order Management Implementation Manual*.

## **Step 21: Set Up Rates**

Oracle Transportation Planning integrates with Oracle Transportation Execution to obtain rating information. This section discusses the following in detail:

- 'Truckload Freight Rating, page 4-47
- 'Continuous Move Freight Rating, page 4-59
- 'Less-than-Truckload Freight Rating, page 4-62
- 'Parcel Freight Rating, page 4-63



## Truckload Freight Rating

Oracle Transportation Planning may build truckload shipments as direct shipments (point-to-point) or as multi-stop truckloads. Multi-stop truckloads pick up goods or drop them off in more than one location.

The following sections present the requirements for rating truckload shipments.

For more information on the file format for loading truckload lanes, base prices, origin and destination surcharges, and accessorial charges, refer to *Oracle Transportation Execution Implementation Manual*. Note that you must specify certain freight rate attribute values for the truckload carriers in Oracle Shipping Execution windows. See 'Step 12: Set Up Carriers and Carrier Attributes, page 4-11 for more information. In the following sections, such information is specified where relevant.

### Price List Qualifiers

The following entities serve as price list qualifiers.

- **Lane:** Every truckload rate is associated with a lane, which represents the geographic area for that rate. A lane consists of an origin region and a destination region. The lane for a multi-stop truckload trip refers to the first stop and the last stop on the trip. You can establish the geographic specificity of a lane's origin or destination at the following levels:

- Country
- Zone
- State
- City
- Zip codes

If multiple rates are applicable to a particular shipment, that is, multiple lane definitions cover the specific origin and destination of the trip, the system uses the lowest rate. If multiple lanes tie for the lowest rate, the system selects any of them.

- **Vehicle Type:** The rates are specific to a vehicle type, such as a 53 ft van or 48 ft refrigerated truck.
- **Service Type:** Service type for a truckload can be Standard or Team. This enables you to assign differing rates per driver allocation, given the same carrier, vehicle type, and lane. If the service is Standard, then any governmental regulations on driving times must be obeyed with accommodation for layovers. For example, in the United States, the Department of Transport stipulates layover times. If the service is Team, layovers are not an issue.

- **Effective and Invalid Dates:** For a truckload rate to qualify for a truckload trip, the following parameters must be met:
  - The rate's effective date must be earlier than or equal to the planned departure date at the first stop.
  - The rate's invalid date must be later than or equal to the planned departure date at the first stop.

### Truckload Rate Types

You have different options to specify truckload trip rates, such as per mile, per unit time, flat rate, and fixed plus variable costs. Each of these charges can be based on the combination of carrier and service or on carrier, service, and vehicle type. Oracle Transportation Planning enables you to define any or all of the following:

- **Distance Based Rates:** Distance based rates are per unit of distance; for example, per mile or per kilometer. You can define the following:

- Loaded distance rate; for example, \$/mile, \$/km
- Unloaded distance rate; for example, \$/mile, \$/km

Empty legs in a trip usually have the unloaded distance rate associated with them.

For calculating the base price based on distance, the system makes the following assumptions:

- Loaded Distance = Sum of Loaded Stop Distances
- Unloaded Distance = Sum of Unloaded Stop Distances
- Total distance based trip charge = Loaded distance \* Loaded distance rate + Unloaded distance \* Unloaded distance rate

In addition, a minimum distance charge may apply. The system considers the greater of the minimum distance charge and the sum of the actual loaded and unloaded distance charges. The minimum charge applies on the total distance, that is, the sum of stop to stop distances and not on each individual stop-to-stop distance.

Calculated distance charge = Max {minimum distance charge, total distance based trip charge}

Trip distance depends on the distance calculation method. Oracle Transportation Execution uses the following distance calculation methods to determine distance-based rates for truckload moves. You can select one of the following distance calculation methods:

- **Shortest Direct Route Distance or Straight Line Distance:** This is the shortest

distance from the trip's origin to the final destination, considering the highway network. Intermediate stops are ignored. You can define a certain tolerance on the distance. If the actual distance is more than the tolerance specified, then out-of-route charges apply.

- **Full Route Distance:** Full Route Distance gives the sum of the actual highway distances for every leg of the trip.

You specify the Distance Calculation method (Direct Route or Full Route) used by a carrier on the Rating, Payment tab in the Carriers window. Use the seeded Manufacturing and Distribution Manager responsibility and select Freight Carriers from the Shipping Setup menu to access the Carriers window.

- **Unit Based Rates:** Unit based rates refer to the cost per unit of freight carried. This rating is based on unit; for example, pallets, pieces, or units of weight such as pounds, kilograms, and units of volume such as cubic feet.

Note: You specify a carrier's Unit Rate Basis, such as Pallet, Weight, Volume, or Container on the Rating/Payment tab on the Carriers window. Access the Carriers window using the seeded Manufacturing and Distribution Manager responsibility.

Unit cost = Load units/unit size \* per unit charge

For example, if the shipment is 1000 lbs, the unit size (weight) is 100 lb, and per unit size charge is \$5.00, then the unit cost is:

$$1000/100 * \$5.0 = \$50.00$$

In addition, a minimum number of units to be charged may apply. The system considers the greater of the minimum unit rate and the actual rate per unit cost for the shipment rating.

Calculated charge = Max {minimum unit charge, actual units \* unit charge}

- **Flat Rates:** The freight cost is based on a flat rate (\$X) per trip; for example, \$500 per trip.
- **Time Based Rates:** This rating is based on the time required for the freight carried. You can specify the maximum total time allowed for a trip by a carrier on the Mode Limits tab on the Carriers window. The Carriers window is accessible using the seeded Manufacturing and Distribution Manager responsibility.

The time based rate is calculated on an hourly basis and the total tariff is calculated on the basis of the time taken from departure from first stop to arrival at last stop. In addition, a minimum time charge may apply. The system considers the greater of the minimum time charge and the actual time based rate for the shipment rating.

Calculated time based charge = Max {minimum time charge, actual time based charge}

Total charge = Max {minimum distance charge, total distance based charge} + Max

{minimum unit charge, units \* unit charge} + Max {minimum time charge, time \* charge per unit time} + Flat rate

### **Accessorial Charges**

Accessorial charges are fees for additional services incidental to the main transportation service. Some of these charges depend on optional services requested by the shipper, while others are mandatory and are applied by the carrier regardless of service and shipped commodity type. When computing a price, the system considers all the accessorial charges that apply for the chosen carrier and vehicle. The following are the various accessorial charges:

- **Stop Charges:** Each carrier may have a certain number of stops included in the rate. In addition, the carrier may have a maximum number of stops allowed in the trip and stop off charges per stop. Note that the origin and the final destination do not count as stops.

The maximum number of stops allowed by a carrier is specified on the Mode Limits tab in the Carriers window. You also specify whether a carrier allows interspersing of loads (pick-up and drop-off) using the Allow Interspersal of Loads check box on the Mode Limits tab. You can access the Carriers window using the seeded Manufacturing and Distribution Manager responsibility.

In the template you use to bulk load charges, you can specify the following:

- Number of free stops
- Cost of first additional stop
- Cost of second additional stop
- Cost of third additional stop
- Cost of fourth additional stop
- Cost of fifth additional stop
- Cost per further additional stop

The following example illustrates the calculation of stop off charges.

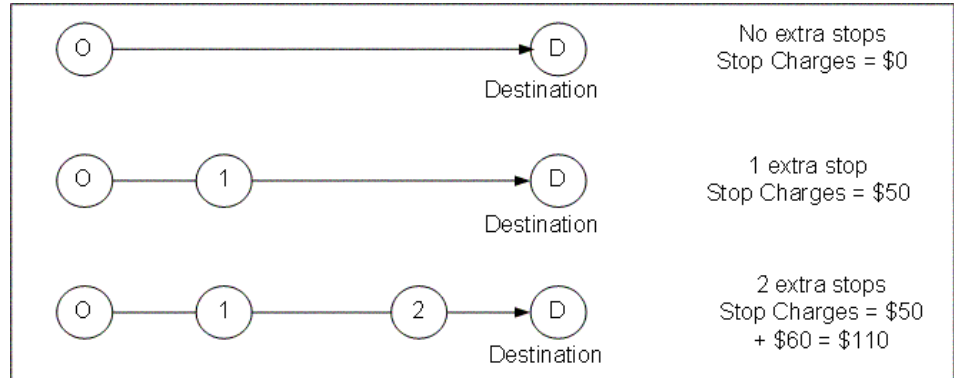
For a load from origin O to Destination D, the following stop off charges apply.

- Number of free stops = 0
- Cost of first additional stop = \$50
- Cost of second additional stop = \$60
- Cost of third additional stop = \$70

- Cost of fourth additional stop = \$80
- Cost of further additional stops = \$75

For no extra stops, the stop charges incurred is \$0, for one extra stop, the stop charges incurred is \$50, and for two additional stops, the stop charges incurred is  $\$50 + \$60 = \$110$ . 'Example for Stop Charges, page 4-51 illustrates this example.

**Example for Stop Charges**



- **Out-of-Route Charge:** If a trip's travel distance is significantly longer than the direct distance between its first and last stops, an extra charge may be incurred. The out-of-route cost applies for all distance calculation methods. You can define the following for calculation of out-of-route charges:

- **Maximum out-of-route (excess) percentage.** If you have not specified this value, the system does not consider any out-of-route distance.

Note that the Maximum Out of Route Percentage allowed by a carrier is to be specified on the Rating/Payment tab on the Carriers window. Use the seeded Manufacturing and Distribution Manager responsibility and select Freight Carriers from the Shipping Setup menu to access the Carriers window.

- **Cost per out-of-route (excess) unit of distance in excess of maximum.** If you have not specified this value, then cost per out-of-route unit of distance is considered to be \$0.
- **Out of route distance = [Sum of loaded and unloaded stop distance] - [direct trip distance].**

Note that the direct trip distance may not be equal to the lane distance. For example, consider a lane defined as California-Boston, whereas the direct trip is from San Francisco to Boston.

The following examples illustrate the application of out-of-route charges in the case of

straight line distance and full route distance measurement methods:

#### **Straight Line Distance Measurement**

Consider the following:

- Carrier out-of-route tolerance = 10%
- Distance based charge = \$1 per mile
- Out-of-route charge = \$2 per mile

Suppose that a truckload trip is between initial origin A and final destination B and makes two intermediate stops at X and Y.

- Direct distance from A to B = 500 miles
- Actual distance A-X-Y-B = 600 miles

The costs for this truckload are as follows:

- **Distance based charges =  $500 * \$1 = \$500$**

The distance based charges are calculated on the direct distance from first to last stop.

- Out-of-route charges:
  - Out-of-route tolerance =  $10\% * 500 \text{ miles} = 50 \text{ miles}$
  - Excess out-of-route distance =  $600 - 500 - 50 = 50 \text{ miles}$
  - Out-of-route charges =  $50 * \$2 = \$100$

**Total charges = \$600**

#### **Full Route Distance Measurement**

Typically, you do not specify out-of-route charges when the distance method is full route. However, if the carrier specifies these charges, the accessorial costs are calculated as follows:

Consider the following

- Carrier out-of-route tolerance = 10%
- Distance based charge = \$1 per mile
- Out-of-route charge = \$2 per mile

Consider a truckload trip between initial origin A and final destination B that makes two intermediate stops at X and Y.

- Direct distance A-B = 500 miles

- Actual distance A-X-Y-B = 600 miles

The costs for this truckload are as follows:

- Distance based charges =  $600 * \$1 = \$600$

The system calculates the distance based charges on the entire trip distance.

- Out-of-route charges:
  - Out-of-route tolerance =  $10\% * 500 \text{ miles} = 50 \text{ miles}$
  - Excess out-of-route distance =  $600 - 500 - 50 = 50 \text{ miles}$
  - Out-of-route charges =  $50 * \$2 = \$100$

**Total charges = \$700**

### **Layover Charges**

Layovers enforced legally do not incur charges while layovers caused due to other factors may incur charges. The following sections discuss layover times and charges in detail.

- Legal Layovers (without charges): Layover time is the time a driver spends not working and away from home terminal before completing current assignment. Layovers are typically required due to legal regulations that limit daily driving time. The legal layover regulations are as follows:
  - Minimum layover time
  - Maximum distance in 24 hours
  - Maximum on-duty time in 24 hours
  - Maximum driving time in 24 hours

The planning engine builds loads that do not violate the legal layover regulations. The layovers that occur due to adherence to legal layover regulations are not chargeable.

For a specific carrier, you can specify the following layover requirements on the Mode Limits tab in the Carriers window. The Carriers window is accessible using the seeded Manufacturing and Distribution Manager responsibility.

- Minimum Layover Time
- Maximum Layover Time
- Maximum Distance per Day

- Maximum Driving Time per Day
- Maximum On-Duty Time per Day
- Layovers (with Charges): Layovers may also be required because stop locations are not available for shipping or receiving at the time a driver arrives there. Layover may also be required when the driver has to take a layover because of standing appointments. In such cases, the carrier may charge the shipper with layover charges. Layover charges are of two types: weekday layover charges and weekend layover charges.

### Weekday Layover Charges

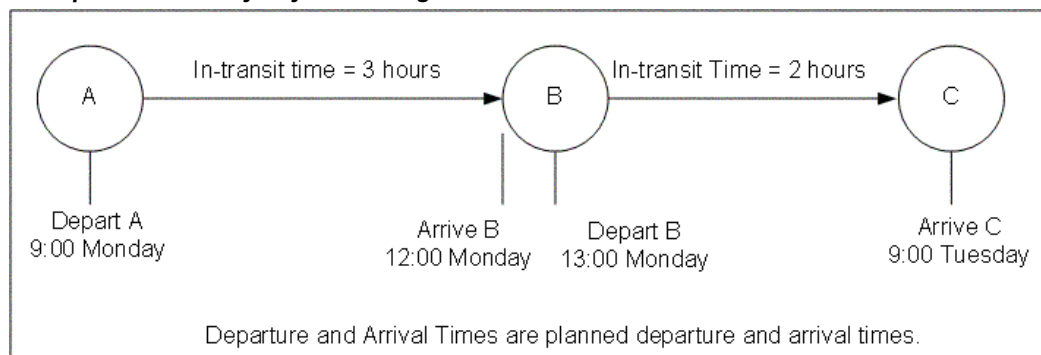
Weekday layover charges are incurred if the physical arrival time of the truck at a facility plus the unloading or loading time required at that facility is within the carrier's layover charge business hours, but the truck has to wait until the next day for delivery. This can be because the facility is closed, because of standing appointment constraints at that facility, or because the facility is unable to accept trips due to limited dock capacity and handling capacity. Multiple layovers can be charged if the layover spans across multiple days. This is calculated on the basis of the number of midnights occurring in the layover. Note that scheduling of the weekday layover is independent of the facility calendar and the carrier's general business hours.

You define carrier layover charge business hours using a profile option MST: Default Carrier Calendar Code. You can specify the start time and end time. For example, if you set this profile option with a start time of 8:00 a.m. and an end time of 5:00 p.m., then the carrier's general business hours are interpreted as 8:00 am - 5:00 pm from Monday to Friday.

You can also define the Weekday Layover Charges for a given carrier service.

Example for Weekday Layover Charges, page 4-54 illustrates weekday layover charge calculation for a trip A-B-C:

### Example for Weekday Layover Charges



In the example, the driving time from B to C is only 2 hours and the unloading and loading activity at C takes 1 hour. The carrier's general business hours are 8:00 a.m. to



5:00 p.m., Monday to Friday. In this case, the physical arrival time at Facility C is 15:00 Monday and the unloading and loading activity lasts for 1 hour which is 16:00 Monday. However, the plan arrival time at facility C is only at 9:00 Tuesday. In this case, the weekday layover charge applies since the driver has sufficient time to drive from facility B to facility C and perform unloading or loading activity at facility C on Monday by 16:00 hours, but has to wait until Tuesday morning 9:00 a.m. If the weekday layover charge defined is \$275, then the shipper incurs these charges.

If instead of scheduling the delivery at facility C on Tuesday at 9:00 a.m., the delivery was scheduled at facility C at 11:00 Wednesday, the total layover time for the driver is 44 hours (15:00 Monday-11:00 Wednesday), and the layover spans across two mid-nights, Monday and Tuesday. This is considered as two layovers. The total layover charges incurred by the shipper in this case is  $2 * \$275 = \$550$ .

### **Weekend Layover Charges**

Weekend layover charges are applicable if the trip itinerary includes a weekend. In Oracle Transportation Planning, the weekend is Saturday and Sunday. In general, the shipper incurs weekend layover charges if the driver's physical arrival time at a facility plus the unloading or loading time required at the facility falls after the carrier's general business hours on Friday and before general business hours on Monday. The planned arrival time is during general business hours on Monday.

Weekend layover charges are defined based on the distance from the pick-up or delivery stop before the weekend to the stop after the weekend. You can define weekend layover charges with distance breaks.

For example:

- 1201-1500 miles: \$100
- 1001-1200 miles: \$200
- 501-1000 miles: \$400
- 0-500 miles: \$600

In some situations, both weekday and weekend layover charges may be incurred.

For more examples of weekday and weekend layover charges, refer to 'Examples of Layover Charge Consideration, page C-1.

### **Loading and Unloading Charges**

Loading charges can be classified as Loading and Assisted Loading charges and unloading charges as Unloading and Assisted Unloading charges.

- **Loading or Unloading Charges:** When a consignor or consignee requests loading or unloading services from the carrier's staff (usually the driver), loading or unloading charges apply. Loading and unloading charges may be defined as *one* of the following:

- Flat fee: loading or unloading charge = flat fee for loading or unloading
- Per unit weight: loading or unloading charge = loading or unloading charge per unit weight \* load weight
- Per piece: loading or unloading charge = number of pieces \* loading or unloading charge per piece
- Per unit volume: loading or unloading charge = loading or unloading charge per unit volume \* load volume
- Per pallet: loading or unloading charge = number of pallets \* loading or unloading charge per pallet

In addition, a minimum loading or unloading charge may apply.

Loading or Unloading charge = Max {Minimum loading or unloading charge, Calculated actual loading or unloading charge}

- Assisted Loading or Unloading Charges: When a consignor or consignee requests additional loading or unloading services, assisted loading or unloading charges apply. Assisted loading or unloading charges may be defined as *one* of the following:
  - Flat fee: assisted loading or unloading charge = flat fee for assisted loading or unloading
  - Per unit weight: assisted loading or unloading charge = assisted loading or unloading charge per unit weight \* load weight
  - Per piece: assisted loading or unloading charge = number of pieces \* assisted loading or unloading charge per piece
  - Per unit volume: assisted loading or unloading charge = assisted loading or unloading charge per unit volume \* load volume
  - Per pallet: assisted loading or unloading charge = number of pallets \* assisted loading or unloading charge per pallet

In addition, a minimum assisted loading or unloading charge may apply.

Assisted loading or unloading charge = Max {Minimum assisted loading or unloading charge, Calculated actual assisted loading or unloading charge}

The assessment of the carrier's loading or unloading charges is determined by the loading protocol at different stop locations (facilities) on the trip. The loading protocol is defined at the facility level as carrier, facility, or joint. See 'Loading Protocol, page 4-28 for more information. Based on loading protocol, the loading or unloading charges apply as follows:

- Carrier: Loading or unloading charges apply
- Facility: No carrier loading or unloading charges apply
- Joint: Assisted loading or unloading charges apply

#### Other Handling Charges

A carrier can specify a handling charge that can include accessorial charges for the following:

- Handling
- Break-Bulk
- Import and Export Compliance
- Bonded Storage

The accessorial charge applies to the entire trip and is calculated as follows:

- Flat fee: Flat fee is applied once for the trip; not at each stop.
- Per unit charge (weight or volume)

For planning purposes, the planner can include the accessorial charges while setting up the plan options. See 'Defining Plans, page 6-1 for more information. Note that if this cost is selected, then it applies to all carriers that levy handling charges.

#### Surcharges

Oracle Transportation Planning considers the following surcharges:

- Origin and Destination Surcharge for Designed Zones
  - Origin Surcharge for Designated Zones: This surcharge is applied for trips having pick-up stops at a specific zone or origin. The origin surcharge is applicable at the origin stop and is per carrier and service.  
For example, for carrier A, origin surcharge for trips that have pick-up stops in New Mexico is \$400, while origin surcharge for trips with pick-up stops in zone 94404-94065 is \$200.
  - Destination Surcharge for Designated Zones: This is a surcharge applied for trips with delivery stops at a specific zone or destination. Destination surcharge is applicable at the destination stop and is per carrier and service.  
For example, for carrier B, destination surcharge for trips with delivery stops in New York city is \$300, while destination surcharge for trips with delivery stops in Long Island is \$250.
- Fuel Surcharges: Fuel surcharge is entered as a percentage of the base rate (per unit

distance, per unit weight/volume, per unit time, or fixed cost) for truckload carriers through the Accessorial Charges loader. For example, if the per unit distance charges are \$1/mile and the trip is 1000 miles, then the line haul cost is \$1000. If the fuel surcharge was specified as 1%, then the applicable surcharges are 1% \* \$1000 = \$10.

You specify surcharge rates by completing a spreadsheet template and then bulk loading the template. The template can be downloaded from the Bulk Load Data page in Oracle Transportation Execution. Note that surcharges can be loaded at a postal code, city, state, or country level. To apply the appropriate surcharge, you must specify the surcharge level used by a specific carrier on the Rating, Payment tab in the Carriers window. To access this window in Oracle Shipping Execution, use the seeded Manufacturing and Distribution Manager responsibility.

### **Truckload Rate Calculation**

The planning engine uses the following process for truckload rate calculation. This calculated rate is the planned delivery cost. Note that the truckload rate for each line is the greater of the specified minimum charge and the calculated cost. If not, then the planning system considers the minimum cost for each line.

1. Calculate the trip distance as per the distance method chosen.
2. Calculate the trip cost  
$$\text{Trip cost} = \text{Max \{minimum distance charge, total distance based charge\}} + \text{Max \{minimum unit charge, units * unit charge\}} + \text{Max \{minimum time charge, actual time based charge\}} + \text{Flat rate.}$$
3. Calculate the number of charged stops.  
Number of stops on a trip - number of stops included in the rate.
4. Calculate stop off charges for the entire trip  
First stop off charge + second stop off charge + third stop off charge + additional stop off charges thereafter.
5. Calculate loading charges  
Loading charges + assisted loading charges at each stop.
6. Calculate unloading charges.  
Unloading charges + assisted unloading charges at each stop.
7. Calculate out-of-route cost. Calculate the exceeded distance, and then apply the out-of-route cost per km/mile to the exceeded distance.
8. Calculate all other accessorial charges.

9. Calculate surcharges.
10. Total trip cost = summation of all the above charges.

### **Continuous Move Freight Rating**

A continuous move consists of a sequence of loads that a single truck can serve as one mission. Truckload carriers often give preferential pricing to continuous moves, relative to the sum of the individual trips making up the move. This is because the combination of movements helps the carrier to address geographical vehicle imbalances and the massed business volume helps the carrier to increase resource utilization. The pricing advantages often reach significant enough levels to justify the inclusion of empty movements between loaded legs (as part of the continuous move-building process). The following process is used for identifying the continuous move carrier and for rating the move:

#### **Applicable Carriers**

A carrier-service-vehicle combination will be eligible to operate a continuous move if and only if it is valid for the lane beginning at the first stop of the first trip of the continuous move and ending at the last stop of the last trip of the continuous move.

For example, a continuous move consisting of trips A-B, C-D, and E-F can be handled by a carrier that has defined the lane A-F even if the carrier has not defined any of the lanes A-B, C-D, or E-F.

#### **Applicable Lanes for Rating**

All the trips in a continuous move will be rated according to the rates that apply to the lane that begins at the first stop of the first trip of the continuous move and ends at the last stop of the last trip of the continuous move.

For example, in a continuous move consisting of trips A-B, C-D, and E-F, all of the trips will be rated according to the rates for lane A-F even though, individually, the individual lanes may not be related to the lane A-F in any way.

#### **Rating Attributes**

The rating mechanism assumes that for any lane-service-vehicle combination, a carrier may have three different distance charges:

- Loaded distance (mandatory)
- Empty distance (optional)
- Continuous move distance (optional)

Also, at a carrier level, each carrier may have the following attributes:

For a specific carrier, these attributes can be specified on the Rating/Payment and Mode Limits tab in the Carriers window. Use the seeded Manufacturing and Distribution Manager responsibility to access the Carriers window.

1. Specify on the Rating, Payment tab:
  - Rate variant (Discount basis or Rate basis)  
See 'Discount-Based Variant, page 4-61 and 'Rate-Based Variant, page 4-61 for more information.
  - First load discount (Yes/No, default Yes)  
See 'Discount-Based Variant, page 4-61 and 'Rate-Based Variant, page 4-61 for more information.
  - Free deadhead distance (optional)  
Specify the maximum non-cargo-bearing distance in a continuous move for which the carrier does not charge you.
  - Minimum distance for continuous move pricing (optional)  
Specify the minimum distance for which the carrier offers the continuous move discount.
  - Minimum time for continuous move pricing (optional)  
Specify the minimum time involved in the movement of cargo, for which the carrier offers continuous move rating.
2. Specify on the Mode Limits tab:
  - Allow continuous moves (Yes/No, default No)  
The carrier must allow continuous moves. You specify whether a carrier allows continuous moves using the Allow Continuous Move check box on the Mode Limits tab in the Carriers window.
  - Maximum continuous move time (optional)  
The time span, which is the driving time plus the layover time plus the subsequent waiting time of each deadhead leg in the continuous move must be less than the carrier's maximum, if this value is specified. You specify this maximum value on the Mode Limits tab in the Carrier's window.
  - Maximum continuous move distance (optional)  
The total distance of the continuous move must be less than the carrier's maximum. You specify this value in the Carriers window.
  - Maximum deadhead distance (optional)  
The distance of each deadhead move must be less than the carrier's maximum. You specify this value in the Carriers window.

- Maximum deadhead time (optional)

A carrier may have minimum distance or time amounts required for the application of continuous move pricing. Failure of a continuous move to add up to these minimums does not prevent the carrier from operating that continuous move, but such a continuous move may produce no benefits relative to operating the continuous trips independently. You can specify this maximum value in the Carriers window.

### **Discount-Based Variant**

If the Rate Variant selector on the Rating/Payment tab in the Carriers window is set to Discount for a carrier, then any continuous move operated by that carrier is rated according to the discount method. The discount-based method works as follows, assuming that the continuous move meets all of the carrier's parameters.

1. Rate each trip in the continuous move individually, using the loaded distance rate for the lane beginning at the continuous move's first stop and ending at its last stop.
2. Rate each empty deadhead in the continuous move individually. The system uses the empty distance rate for the lane beginning at the continuous move's first stop and ending at its last stop if this empty rate exists. Otherwise, the system uses the loaded rate. For the distance, the system uses the actual distance of the deadhead minus the free deadhead distance or zero, whichever is greater.
3. If the first load discount flag is set to Yes, then the system applies the continuous move discount to all the trips in the continuous move with the exception of the empty deadheads. Otherwise, the system applies the discount to all the trips except the first one and the deadhead trips. You set the first load discount flag on the Rating, Payment tab in the Carriers window. To access the Carriers window, use the seeded Manufacturing and Distribution Manager responsibility.

Note that if the continuous move is less than either the carrier's minimum required time or its minimum required distance for continuous moves, neither the discount nor the free deadhead distance applies.

If the Rate Variant is specified as Discount, then you specify the Continuous Move Discount Percentage on the template (tlChargesDiscounts.txt) you use to bulk load truckload charges and discounts. The template is available for download on the Bulk Load Data page in Oracle Transportation Execution. You can access this page using the Oracle Transportation Super User responsibility. Select TL Carriers on the Bulk Load subtab (on the Setup tab). Select the Surcharges Data Type and then download the template.

### **Rate-Based Variant**

If the Rate Variant selector on the Rating/Payment tab in the Carriers window is set to Rate for a carrier, then the system rates any continuous moves operated by that carrier according to the rate-based method. This method works as follows, assuming that the continuous move meets all of the carrier's parameters.

1. Rate each trip in the continuous move individually, using the continuous move distance rate for the lane beginning at the continuous move's first stop and ending at its last stop. The system uses the continuous move distance rate if it exists, otherwise the system uses the loaded rate.
2. Rate each empty deadhead in the continuous move individually. The system uses the empty distance rate for the lane beginning at the continuous move's first stop and ending at its last stop if this empty rate exists. Otherwise, the system uses the continuous move rate. If neither the empty rate nor the continuous move rate exists, the system uses the loaded rate. For the distance, the system uses the actual distance of the deadhead minus the free deadhead distance or zero, whichever is greater.

Note that if the continuous move is less than either the carrier's minimum required time or its minimum required distance for continuous moves, neither the continuous move rate nor the free deadhead distance applies.

Refer to *Oracle Transportation Execution Implementation Manual* for information on specifying continuous move rates.

### **Less-than-Truckload Freight Rating**

Oracle Transportation Planning supports carrier specific less-than-truckload rating functionality. You can qualify less-than-truckload rates for a carrier by lane and service. Less-than-truckload rates are based on three components: lane, delivery weight, and freight class. The lane is based on the pick-up and delivery postal codes. Less-than-truckload rates typically decrease as the weight of the shipment increases. The rating structure is designed to enable shippers to reduce costs by consolidating deliveries to achieve a higher weight per delivery. The less-than-truckload rating functionality offers the following:

- **Freight Classes:** Oracle Transportation Planning supports grouping of commodities into 18 freight classes as determined by the United States National Motor Freight Traffic Association. Note that you can configure these freight classes according to requirements of the geography or country. For example, Europe can have a different freight class definition.
- **Discounts:** The less-than-truckload rating functionality supports specification of discounts to less-than-truckload rates. Discounts are applied as a percentage of the published rate or tariff.
- **Weight Breaks:** You can specify less-than-truckload rates by weight breaks for different freight classes. Less-than-truckload rates are specified using CWT (hundredweight or cost per hundred pounds). The functionality also supports deficit weight rating. Deficit weight is designed to compare the rate between two weight break points and apply the lesser of the two rates.
- **Minimum Charges:** You can specify the minimum charges to be applied if the calculated rate falls below the minimum charge.



- **Fuel Surcharges:** For less-than-truckload carriers, the fuel surcharge is entered as a fixed amount, amount per unit weight, or percentage of the base rate through the Charges and Discount loader. The Charges and Discounts are related to a Rate chart. Since a rate chart can contain different lanes, the fuel surcharges specified in a rate chart are applicable to all the lanes covered by that rate chart. The LTL fuel surcharge can be specified in any of the following ways.
  - **Lump sum:** In this case the surcharge is applied as a fixed amount; for example, \$50
  - **Amount:** In this case the surcharge is applied on a per unit basis; for example, \$1 per pound

For example, if the less-than-truckload base charges are \$500/cwt and the shipment is 200 lbs., then the line haul cost is  $(\$500 * 200/100) = \$1000$ . If the fuel surcharge is specified as 1%, then the applicable surcharges are  $1\% * \$1000 = \$10$ .

On the Mode Limits tab in the Carriers window, you can specify the following piece size restrictions for a specific carrier for less-than-truckload shipment. Use the seeded Manufacturing and Distribution Manager responsibility and select Freight Carriers from the Shipping Setup menu to access the Carriers window.

- Length: Minimum and Maximum
- Height: Minimum and Maximum
- Width: Minimum and Maximum

For a detailed discussion on less-than-truckload rating, see *Oracle Transportation Execution Implementation Manual*.

You can create rate charts by completing a spreadsheet template and then bulk loading the information into the system. The Rate Chart template is available for download on the Bulk Load Data page in Oracle Transportation Execution. Use the seeded Oracle Transportation Super User responsibility to access this page.

You can also specify charges and discounts for less-than-truckload shipments and apply them to rate charts. The system supports charges and discounts as rate per unit of measure, percentage, or fixed rate. An example for a rate per unit of measure is a charge of \$1.00 per pound. An example of a percentage rate is a 10% surcharge on the delivery charge. An example of a fixed rate is a discount of \$10.00. You can create charges and discounts also by completing the spreadsheet template available for download on the Oracle Transportation Execution Bulk Load Data page, and then by bulk loading the data into the system.

For more information on downloading templates and bulk loading data, refer to *Oracle Transportation Execution Implementation Manual*.

## Parcel Freight Rating

Oracle Transportation Planning supports carrier specific parcel rating functionality. Parcel rates are based on three components: service type, zones, and delivery weight.

- **Zones:** The parcel rating functionality supports definition of zones. Zones are determined by the pick-up postal code and destination postal code. You can group geographic regions having similar rates into the same zone. Typically, United States domestic zone charts are defined based on postal code and service type. For example, the zone chart below is applicable to shipments originating from origin postal code range 940-945. A ground shipment originating from postal code 94001 with a destination of postal code 93001 is assigned to zone 3.

The following table shows an example of a zone chart

Destination Zip	Ground	Next Day Air	2nd Day Air
930-935	Zone 3	103 Zone	Zone 203
840-844	Zone 4	Zone 104	Zone 204
594-599	Zone 5	Zone 105	Zone 205

- **Carrier Rate Charts:** Carrier rate charts are specific to carrier service type. For example, if a carrier provides a next day air service and two day air service, you can define a rate chart that is unique to each service type. The carrier service type on the trip identifies the appropriate rate chart to apply to the delivery. The parcel rating functionality supports definition of parcel carrier rate charts in a weight versus zone matrix. The system calculates parcel rates on the basis of individual container weight including outside carton and packing materials. Any fraction over a pound is rounded up to the next pound. The rate applied to a shipment is the intersection of weight and appropriate zone.

For example, a zone 3 ground shipment weighing 1 pound is assigned a rate of \$3.51.

The following table shows an example showing application of parcel rate charts

Weight (in pounds)	Zone 2	Zone 3	Zone 4
1 lb	\$3.30	\$3.51	\$3.58
2 lb	\$3.40	\$3.67	\$3.87

3 lb	\$3.52	\$3.87	\$4.09
------	--------	--------	--------

- **Fuel Surcharges:** For parcel carriers, the fuel surcharge is entered as a fixed amount, amount per unit weight, or percentage of the base rate through the Charges and Discount loader. The charges and discounts are related to a rate chart. Since a rate chart can contain different lanes, the fuel surcharges specified in a rate chart are applicable to all the lanes covered by that rate chart. The parcel fuel surcharge can be specified in any of the following ways.
  - **Lump sum:** In this case, the surcharge is applied as a fixed amount; for example, \$50
  - **Amount:** In this case, the surcharge is applied on a per unit basis; for example, \$1 per pound
  - **Percentage:** In this case, the surcharge is applied to the total parcel base charge before discount

For a detailed discussion on parcel rating, see *Oracle Transportation Execution Implementation Manual*.

On the Mode Limits tab in the Carriers window, you can specify the following piece size restrictions for a specific carrier for parcel shipments. Use the seeded Manufacturing and Distribution Manager responsibility and select Freight Carriers from the Shipping Setup menu to access the Carriers window.

- Length: Minimum and Maximum
- Height: Minimum and Maximum
- Width: Minimum and Maximum

You can create rating zone charts by completing spreadsheet templates and then bulk loading the information into the system. The Rating Zone Chart template is available for download on the Bulk Load Data page in Oracle Transportation Execution. To access the page, use the seeded Oracle Transportation Super User responsibility.

You can also specify charges and discounts for parcel shipments and apply them to rate zone charts. The system supports charges and discounts as rate per unit of measure, percentage, or fixed rate. You can create charges and discounts also by completing the spreadsheet template available for download on the Oracle Transportation Execution Bulk Load Data page and then bulk loading the data into the system.

For more information on downloading templates and bulk loading data, refer to *Oracle Transportation Execution Implementation Manual*.

## Step 22: Set Up Compatibility Constraints

Oracle Transportation Planning considers a number of compatibility constraints for facilities with respect to other facilities, modes, and vehicles. It also considers compatibility constraints for items with respect to other items, facilities, vehicles, and modes. These constraints are modeled in the Oracle Transportation Execution system.

Before defining compatibility constraints, you must complete the following setup:

- **Regions:** You should define geographical regions or user-defined zones before specifying any region/zone-facility compatibility constraints.
- **Companies:**
  - Shipper (Host company)
  - Customers
  - Suppliers
  - Carriers
- **Facilities:** You must define facilities that belong to the different companies. For example:
  - Company A is a shipping company and has facilities located in Cincinnati, New York, and New Jersey.
  - Company B is Company A's customer and has facilities located in San Francisco, Columbus, New England, and Boston.
  - Company C is a supplier of Company A and has facilities located in Richmond, St. Louis, and Chicago.
  - Carrier D is a carrier for Company A and operates consolidation and deconsolidation facilities in Chicago, New York, and Los Angeles.
  - Carrier E is another carrier for Company A and has cross-docking facilities located in Atlanta, Denver, and Phoenix.
- **Items**
- **Modes**
- **Vehicle Types**

## Defining Compatibility Constraints

Oracle Transportation Planning considers the compatibility constraints discussed in the following sections in planning its shipments. Constraints can be exclusive or inclusive.

You define compatibility constraints using the Constraints subtab in Oracle Transportation Execution. Use the seeded Oracle Transportation Super User responsibility to access this subtab.

### Inclusive and Exclusive Constraints

Inclusive constraints define an incompatibility by making everything incompatible except that which is specified in the constraint itself. For example, if facility A has an inclusive compatibility constraint with carrier D, it means that A is incompatible with every carrier except D.

If you define a subsequent inclusive constraint against the same facility and a different carrier, the inclusiveness is an OR condition. For example, if Facility A has inclusive compatibility defined with both Carrier D and Carrier E, you can use Carrier D or Carrier E for scheduling trips to facility A, but no other carrier.

Exclusive constraints describe an incompatibility. For example, if facility A has an exclusive compatibility constraint with carrier D, it means that carrier D cannot serve facility A.

## 1. Host Company Facility-Facility Compatibility

Parameter 1: Host company facility

You can define the host company facility-facility compatibility for facilities belonging to your company (host company). Note that this constraint does not apply to the origin and destination facilities specified in the information input to the planning engine. Rather, it prohibits service to or from the indicated host company facility by way of certain pool or cross-dock facilities.

Parameter 2: Carrier facility

You can define the host company facility-facility compatibility for host company or carrier facilities that are used as discretionary routing points for shipments.

Oracle Transportation Planning enables you to specify facilities that cannot be used as pool points for servicing certain host company facilities. You can also specify facilities that are the only allowable consolidation or deconsolidation points for servicing a specific host company facility. This constraint implies that the host company facility can be served only through specified consolidation or deconsolidation facilities or directly.

Example:

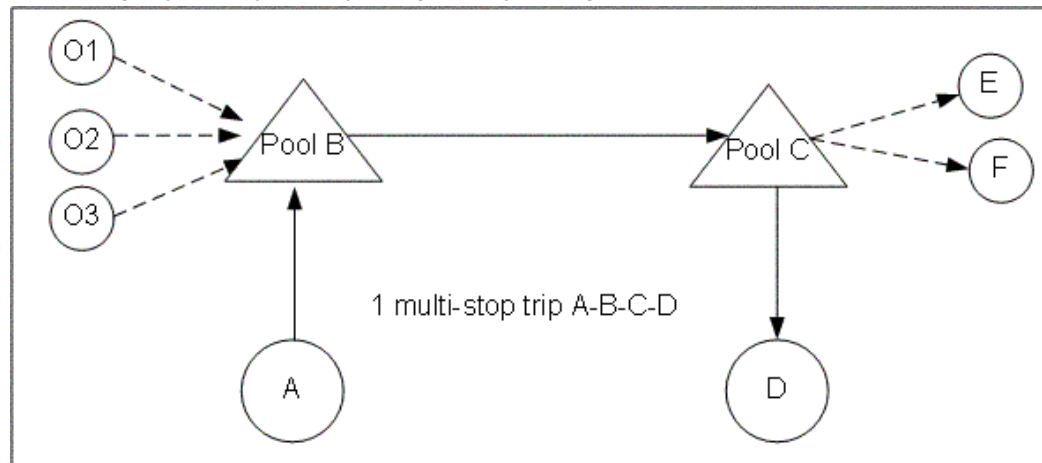
- Exclusion: Shipments to Company B's San Francisco plant cannot be routed through Carrier E's Denver cross-docking facility or through the New Jersey consolidation facility.
- Inclusion: Shipments to Company B's New England store cannot be routed through

any pool or cross-docking facility other than Carrier E's Phoenix cross-docking facility.

Note that the planning engine does not check for consignee compatibility while selecting a consolidation pool and for consignor compatibility while selecting a deconsolidation pool. The following example illustrates this behavior.

'Host Company Facility-Facility Compatibility Example, page 4-68 shows a multi-stop truckload with origin A. At pool point B, other shipments from origins O1, O2, and O3 traveling by less-than-truckload, are consolidated with the truckload from A. They travel together in a truckload to pool point C. At C, the load is deconsolidated and parts of it travel to destinations E and F by less-than-truckload. The remaining load proceeds on the same truck to destination D.

#### **Host Company Facility-Facility Compatibility Example**



Suppose that a host company facility-facility compatibility constraint is defined such that the host company facility O1 can only use Pool B. This means that if any shipments from or to O1 are pooled, then they can be pooled only at Pool B. However, this constraint does not affect other pool points considered in a multi-tier pooling scenario. In this example, Pool C is used for deconsolidation of shipments to customers E and F.

## **2. Customer-Facility Compatibility**

Parameter 1: Customer or customer facility

You can define the customer-facility compatibility for all facilities of a customer, that is, at customer owner level, or for a subset of facilities belonging to the customer.

Parameter 2: Host company or carrier facility

You can specify customer-facility compatibility for host company or carrier facilities that serve as discretionary routing points for a shipment.

The system enables you to specify whether or not certain facilities can be used as consolidation or deconsolidation points for servicing a specific customer. Oracle

Transportation Planning also models facilities through which shipments cannot be routed to a customer. The system also enables you to specify facilities or sets of facilities that must be used as consolidation or deconsolidation points for servicing a specific customer. This inclusion constraint implies that the customer facility can be served only through specified consolidation or deconsolidation facilities or directly.

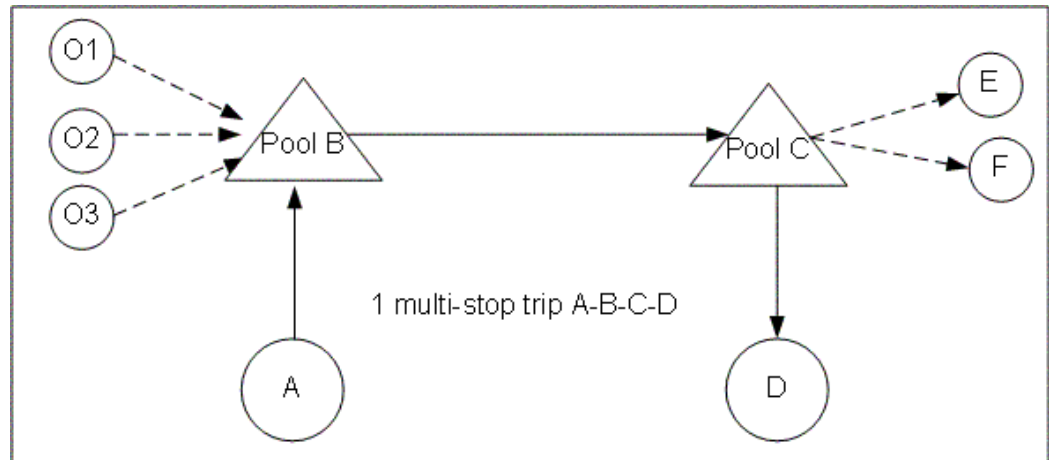
Example:

- Exclusion: All of Company B's customer stores cannot be serviced through host company's (Company A's) New York or New Jersey deconsolidation facilities.
- Inclusion: Company B's Portland store cannot be serviced through any pool point other than Carrier D's New York pool point or Chicago pool point.

Note that the planning engine does not check for consignee compatibility while selecting a consolidation pool and for consignor compatibility while selecting a deconsolidation pool. The following example illustrates this behavior.

'Customer-Facility Compatibility Example, page 4-69 shows a multi-stop truckload with origin A. At pool point B, other shipments from origins O1, O2, and O3 traveling by less-than-truckload, are consolidated with the truckload from A. They travel together in a truckload to pool point C. At C, the load is deconsolidated and parts of it travel to customer destinations E and F by less-than-truckload. The remaining load proceeds on the same truck to destination D.

#### **Customer-Facility Compatibility Example**



Suppose that a customer-facility compatibility constraint is defined such that the customer E can only use Pool C. This means that if any shipments to customer E are pooled, then they can be pooled only at Pool C. However, this constraint does not affect other pool points considered in a multi-tier pooling scenario. In this example, Pool B is used for consolidation of shipments from origins O1, O2, and O3 to customers E and F.

### 3. Supplier-Facility Compatibility

Parameter 1: Supplier or supplier facility

You can specify supplier-facility compatibility at a supplier owner level, which is applicable to all facilities belonging to the supplier, or for a subset of facilities belonging to the supplier.

Parameter 2: Host company or carrier facility

You can specify supplier-facility compatibility for host company or carrier facilities that serve as discretionary routing points for the shipment.

Oracle Transportation Planning enables you to specify non-compatible supplier-facility combinations, which indicate that certain facilities cannot be used as pool points for servicing certain suppliers. You can also specify whether a facility or set of facilities is the only allowable consolidation or deconsolidation point or points for servicing a specific supplier. This inclusion constraint implies that the supplier facility can be served only through the specified consolidation or deconsolidation facilities or directly.

Example:

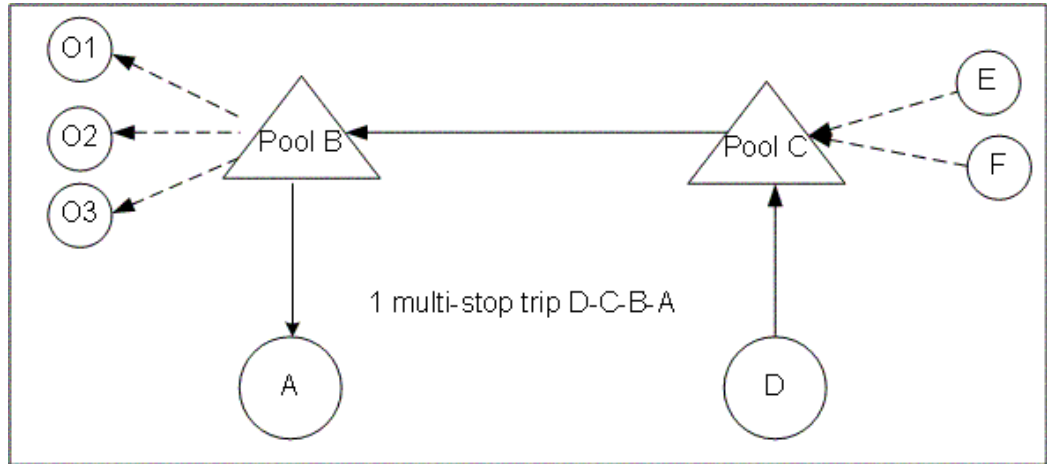
- Exclusion: Shipments from Supplier C cannot be routed through Carrier E's Phoenix cross-docking facility.
- Inclusion: Shipments from Company A's New York store cannot be serviced through any pool point other than Carrier D's New York pool point.

Note that the planning engine does not check for consignee compatibility while selecting a consolidation pool and for consignor compatibility while selecting a deconsolidation pool. The following example illustrates this behavior.

'Supplier-Facility Compatibility Example, page 4-71 shows a multi-stop truckload with origin D. At pool point C, other shipments from suppliers E and F traveling by less-than-truckload are consolidated with the truckload from D. They travel together in a truckload to pool point B. At B, the load is deconsolidated and parts of it travel to destinations O1, O2, and O3 by less-than-truckload. The remaining load proceeds on the same truck to destination A.



#### Supplier-Facility Compatibility Example



Suppose that a supplier-facility compatibility constraint is defined such that supplier E can only use Pool C. This means that if any shipments from supplier E are pooled, then they can be pooled only at Pool C. However, this constraint does not affect other pool points considered in a multi-tier pooling scenario. In this example, Pool B is used for deconsolidation of shipments (from suppliers E and F) to destinations O1, O2, and O3.

#### 4. Region-Facility Compatibility

Parameter 1: Region / Zone:

You can define a region-facility compatibility constraint that applies to all ship-from or ship-to facilities in a common geographical region or user-defined zone. Select a geographical region or user-defined zone and indicate inclusive or exclusive restrictions on the use of a consolidation or deconsolidation facility. You can do this multiple times for a single region or zone. Multiple exclusive restrictions mean not to use any of the specified facilities to serve this zone or region. Multiple inclusive restrictions mean to use only the specified facilities to serve this zone or region.

Parameter 2: Host Company or Carrier Facility

Indicate the host company or carrier consolidation/deconsolidation/cross-docking facility to allow or disallow serving ship-from and ship-to locations in the specified region or zone.

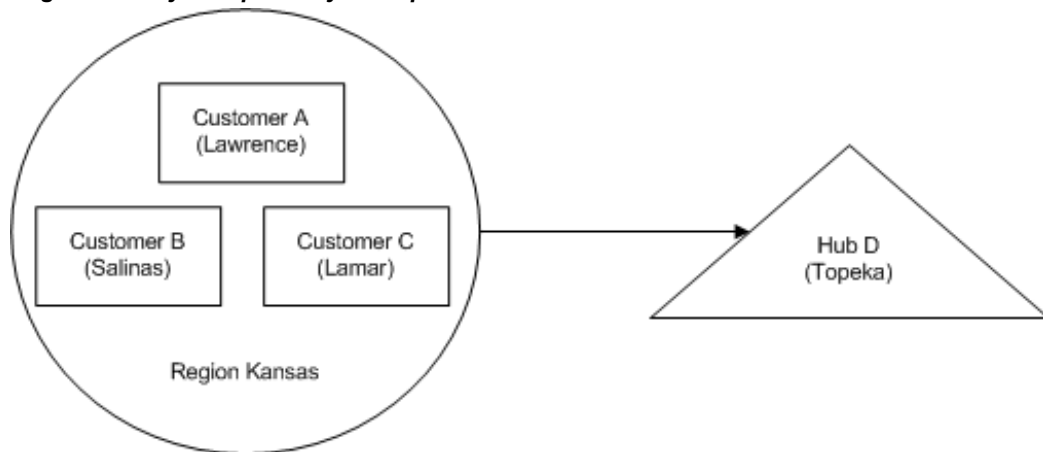
Note that, instead of defining a facility-facility constraint for every single combination of ship-from/ship-to and consolidation/deconsolidation facilities, you can define a single constraint for a consolidation/deconsolidation facility with respect to all ship-from or ship-to points in a common geographic region or user-defined zone. This can reduce the amount of constraint entry significantly. For example, if you need Carrier Pool D in Dallas to be used for sourcing from 50 suppliers in Texas, you need to specify only a single region-facility constraint for any supplier in the region of Texas and the Dallas carrier pool, as opposed to 50 individual supplier-facility constraints. The following example illustrates this behavior.

**Example:**

Host Company X has three customers in the Kansas region.

1. Customer A in Lawrence, Kansas
2. Customer B in Salinas, Kansas, and
3. Customer C in Lamar, Kansas

**Region-Facility Compatibility Example**



All of the three customers can be served only via the Hub D in Topeka, Kansas. With the region-facility compatibility constraint, you should specify that any customer in Kansas can be served only by Hub D in Topeka.

Note that defining a constraint specifying that all the facilities in a zone or region must be served via a specific pool or cross-dock applies only when any of these facilities are being served by a pool or cross-dock. It never rules out serving the facility(s) directly when that is more desirable.

## 5. Facility-Vehicle Compatibility

Parameter 1: Host company, customer, supplier, or carrier facility

Parameter 2: Vehicle type; for example, 53' trailers

The system enables you to specify facility-vehicle type pairs that cannot be combined. For example, a certain facility might not be able to accommodate refrigerated trailers. You can also specify the vehicle(s) that must be used at the facility.

**Example:**

- Exclusion: Company A's Cincinnati facility cannot handle 53' and twin trailers.
- Inclusion: Company B's New England facility can accommodate only 35' trailers and must be served only by 35' trailers.

## 5. Facility-Carrier Compatibility

Parameter 1: Host company, customer, supplier, or carrier facility.

You can set up facility-carrier compatibilities for host company, customer, supplier, or carrier facilities. You can define this compatibility at an owner company level, which means all facilities within the company have the same compatibility condition, or for a subset of facilities.

Parameter 2: Carrier

You can specify non-compatible facility-carrier combinations. Oracle Transportation Planning enables you to specify certain carriers that can service certain facilities.

Example:

- Exclusion: Company B cannot be served by Carrier D.
- Inclusion: Company B's Boston store must be served through Carrier E.

## 6. Facility-Mode Compatibility

Parameter 1: Host company, customer, supplier, or carrier facility

You can define this compatibility at an owner company level or for a subset of facilities. If the compatibility is set at an owner company level, all facilities within the company have the same compatibility condition.

Parameter 2: Mode (truckload, less-than-truckload, or parcel)

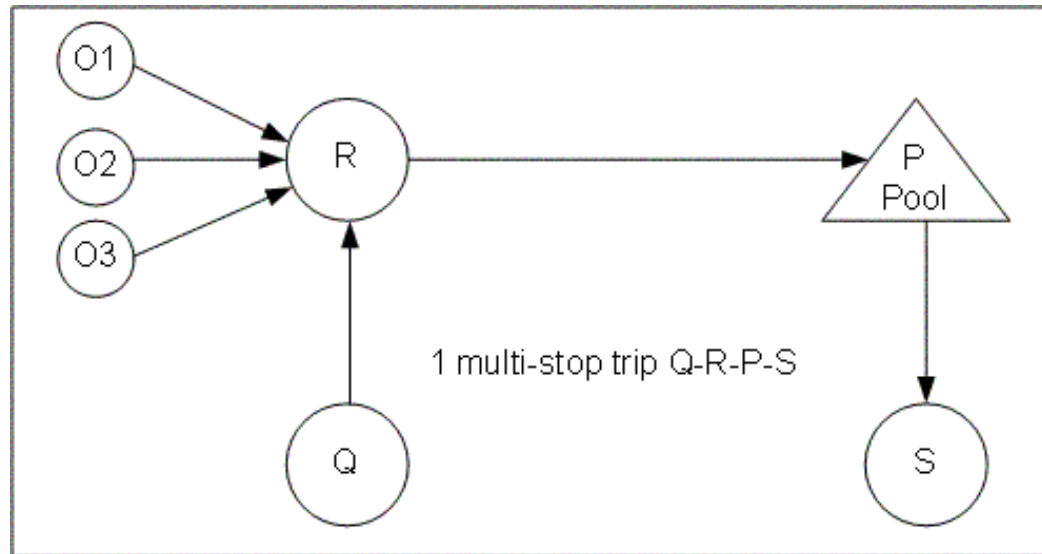
You can specify non-compatible facility-mode combinations. You can also specify that certain facilities can be serviced by certain modes only.

Example:

- Exclusion: Company B's San Francisco stores cannot be served by less-than-truckload or parcel carriers.
- Inclusion: Company B's Columbus plant must be served only by parcel carriers.

Consider the following example showing a multi-stop truckload with origin Q. At stop R, various other shipments from origins O1, O2, and O3 are consolidated with the truckload from point Q. They are together hauled in a truckload to pool point P. The shipments outbound from pool point P also travel as a truckload to stop S.

#### Facility-Mode Compatibility Example



In this case, a facility-mode compatibility constraint might exist that defines that Pool P is compatible only with truckload mode. Therefore, all trips inbound to and outbound from Pool P need to honor this constraint. Note that the compatibility constraint is not applicable to other facilities, such as Q, R, and S.

#### 7. Customer-Customer Compatibility (Non-Mixing of Loads)

Parameter 1: Customer 1

Parameter 2: Customer 2

Some customers require that their goods do not travel in the same trip as those of certain other customers or of any other customers. Oracle Transportation Planning enables you to specify pairs of customers whose items cannot travel together. For example, XYZ Bookstore may not want their books shipped in the same trip as those of ABC Books.

Note that this is an exclusion compatibility only. That is, you can specify that shipments for two customers cannot travel together. This functionality does not allow you to indicate that shipments for two customers must travel together.

#### 8. Item-Facility Compatibility

Parameter 1: Item

This compatibility can be for an item; for example, 2-quart containers of milk.

Parameter 2: Host company, customer, supplier, or carrier facility

You can set this compatibility at an owner company level or at a facility subset level. If you define the compatibility at an owner company level, then all facilities within the company have the same compatibility condition. Note that this constraint does not

apply to the origin and destination facilities specified in the inputs to the planning engine. You cannot prevent an order for an item from moving between its indicated ship-from and ship-to facilities.

Oracle Transportation Planning enables you to specify that certain items must be serviced through certain facilities, or directly. You can also specify non-compatible facility-item combinations such that the item cannot be serviced through specific facilities.

Example:

- Exclusion: Refrigerated items cannot be handled through Carrier D's Los Angeles facility or Carrier E's Phoenix facility.
- Inclusion: Fertilizers must only be handled through any of Carrier E's facilities.

## **9. Item-Mode Compatibility**

Parameter 1: Item

This compatibility constraint can be for an item; for example, 2-quart containers of milk.

Parameter 2: Modes (truckload, less-than-truckload, or parcel)

You can specify the item-mode combinations that are allowed and disallowed.

Example:

- Exclusion: Refrigerated items cannot be sent by air.
- Inclusion: Steel must be sent by truckload.

## **10. Item-Carrier Compatibility**

Parameter 1: Item

This compatibility constraint can be for an item; for example, 2-quart containers of milk.

Parameter 2: Carrier

You can specify the item-carrier combinations that are allowed and disallowed.

Example:

- Exclusion: Double paned glass window item 33446 cannot be sent by Carrier D.
- Inclusion: Computer monitor AS53668 must be sent by Carrier E.

## **11. Item-Vehicle Compatibility**

Parameter 1: Item

This compatibility can be for an item; for example, 2-quart containers of milk.

Parameter 2: Vehicle type; for example, 53' trailers

Shippers may specify required vehicle features or prohibit equipment types based on the type of item that is being transported. You can specify the item-vehicle combinations that are allowed and disallowed. For example, a shipper may demand a refrigerated service for perishable items or rule out selected vehicle types based on weight or size restrictions.

Example:

- Exclusion: Wooden doors cannot be sent on flat bed trailers.
- Inclusion: Butter must be sent on refrigerated trucks.

**Note:** Multiple companies (owners) can use the same facility. For example, two customers may use the same facility or two carriers can use the same deconsolidation center. In such cases, where facilities have multiple owners, the compatibility constraints defined for one owner also applies to the other owners of the facility.

For example, consider that two customers C1 and C2 own the same facility F1. If a facility-mode compatibility constraint is defined as follows:

Parameter 1: Customer C1-Facility F1

Parameter 2: Truckload

Inclusive or Exclusive Constraint: Exclusive, that is, Facility F1 cannot be served by truckload mode.

In this case, if an order is being delivered to Customer C2 at Facility F1, then the compatibility constraint already defined for Facility F1 becomes applicable to Customer C2. Hence, C2 also cannot be served by truckload mode.

This scenario is applicable to all facility related constraints such as facility-mode, facility-carrier, and facility-vehicle compatibilities.

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# Transportation Planning System Setup

This chapter covers the following topics:

- Overview of Transportation Planning System Setup
- Setup Steps

## Overview of Transportation Planning System Setup

This chapter explains the functional setups required on Oracle Transportation Planning. The classification of setups are as follows:

- Profile Options
- Global Preferences
- User Preferences
- Plan Level Setups

A user with the Transportation Planning Administrator responsibility can specify or edit the Global Preferences while a user with the Transportation Planner responsibility can only view the Global Preferences. The global level setups apply to all users, though you can specify some of the parameters at the user level. In such cases, the values specified at the global level default to all users, but the users can change the default values at an individual level.

## Setup Steps

The following sections discuss the required setup steps in Oracle Transportation Planning in detail.

- Step 23: Set Up Profile Options, page 5-2
- Step 24: Set Up Global Preferences, page 5-11

- Step 25: Set Up User Preferences, page 5-18

## Step 23: Set Up Profile Options

Profile options are settings that affect the way your application looks and behaves. As System Administrator or Transportation Planning Administrator, you control how Oracle Transportation Planning operates by setting profile options to the values that you want. You can set profile options at the following different levels: site, application, responsibility, and user. For a detailed discussion of User Profile options, refer to the *Oracle Applications System Administrator's Guide*.

When you set a profile option at more than one level, site has the lowest priority, superseded by application, then responsibility, with user having the highest priority. For example, a value that you enter at the site level may be overridden by values that you enter at any other level. The value that you enter at the user level has the highest priority and overrides values entered at any other level.

You set up profile values on the System Profile Values window. Certain profile options can be set or edited only using the System Administrator responsibility. Other profile options can be set using the Transportation Planning Administrator responsibility.

### Profile Options Editable Using the System Administrator Responsibility

You can define the following profile options at a System level using the seeded System Administrator responsibility.

#### Company Name for Operator Company

Serial Number	User Profile Name	Default	Description
1	MST: Operator Company Name	My Company	Indicate the name you want the company using the application to appear by on the user interface and in reports.

#### Time Unit of Measure

Serial Number	User Profile Name	Default	Description



Serial Number	User Profile Name	Default	Description
1	MST: Hour Unit of Measure	Hour	<p>The value is set to Hour, which is the only time unit of measure used in Oracle Transportation Planning.</p> <p><b>Note:</b> This profile must be set to the unit of measure that your instance uses to represent one hour</p>

#### Server Time Zone

Serial Number	User Profile Name	Default	Description
1	MST: Database Server Location	--	Indicate the location ID of the database server.

#### Map Viewer

Serial Number	User Profile Name	Default	Description
1	MST: Map JDBC driver type	thin	Indicate the JDBC driver type you use to make a connection to the data source for the map.
2	MST: Map RMI binding name	--	Indicate the Remote Method Invocation binding name that is used for the map server.
3	MST: Map RMI host name	--	Indicate the Remote Method Invocation hostname that you use for the map server (typically the machine name where the map server is running).

Serial Number	User Profile Name	Default	Description
4	MST: Map RMI port number	--	<p>Indicate the Remote Method Invocation port number that you use for the map server.</p> <p>The default is 1099. Verify in jserv.properties or zone.properties file of the iAS installation what your setup is.</p>
5	MST: Map base map name	--	Indicate the basemap name for the map as found in the data source maps table.
6	MST: Map data source name	--	<p>Indicate the unique name given to the collection of data source parameters for the map; for example, MST map.</p> <p>You must modify the name if any of the data source profile options change and you cannot re-start the map server.</p>
7	MST: Map database SID	--	Indicate the database SID of the data source for the map (typically the same as the SID of the database server).
8	MST: Map enable java debugging	--	Enable (optional) additional debugging output to the Java console for the map.
9	MST: Map host name	--	Indicate the data source host name for the map (typically the same as the database server machine name).
10	MST: Map icon URL	--	<p>Indicate the URL of the directory where the system stores the image files for the map markers.</p> <p>For Example:  <a href="http://hostname/OA_JAVA/oracle/apps/media">http://hostname/OA_JAVA/oracle/apps/media</a> </p>

Serial Number	User Profile Name	Default	Description
11	MST: Map port number	--	Indicate the listener port number for the data source for the map. This is typically the same as the database server listener port number.
12	MST: Map styles table	--	Indicate the name of the styles table in the data source for the map.
13	MST: Map move factor	--	Indicate the fraction of the width or height by which you want to move the map view when using the navigate buttons on the Map tab. This value must be between 0.1 and 1.
14	MST: Map table name	--	Indicate the name of the maps table in the data source for the map.
15	MST: Map themes table	--	Indicate the name of the themes table in the data source for the map.
16	MST: Map user identification	--	Indicate your user ID and password.
17	MST: Mappers count	--	Indicate the highest number of parallel map requests the planning system must service simultaneously.
18	MST: Map high latitude coordinates	--	Indicate the high latitude coordinates of the minimum bounding rectangle of the default map.
19	MST: Map high longitude coordinates	--	Indicate the high longitude coordinates of the minimum bounding rectangle of the default map.

Serial Number	User Profile Name	Default	Description
20	MST: Map low latitude coordinates	--	Indicate the low latitude coordinates of the minimum bounding rectangle of the default map.
21	MST: Map low longitude coordinates	--	Indicate the low longitude coordinates of the minimum bounding rectangle of the default map.

#### Engine and Snapshot

Serial Number	User Profile Name	Default	Description
1	MST: Use SQL Loader	Yes (use sqlloader)	Indicate whether snapshot should use sqlloader or insert command to add records into tables.
2	MST: Use Delete Worker	Yes (use delete workers)	Indicate whether snapshot and engine should use delete worker or sql command to delete records from tables.
3	MST: Number of Snapshot Workers	7	Indicate the number of workers to be launched for snapshot.
4	MST: Number of Delete Workers	3	Indicate the number of delete workers to be launched for snapshot if the profile option MST: Use Delete Worker is set to Yes.
5	MST: DB trace on	Yes	Indicate whether or not DB trace is turned on (Yes, No).
6	MST: Debug Level	0	Indicate the detail level of the debug mode.  You can specify a number in the range 0-9, where 0 means the system does not output any debug information and a larger number means the system provides more details in the log file.
7	MST: Distance Level	CITY	Indicate the detail level of distance table. Values are ZIP, CITY.

Serial Number	User Profile Name	Default	Description
8	MST: Licensed to Use Oracle Transportation Optimization	--	Indicate whether or not you have licensed Oracle Transportation Optimization. This profile setting decides whether or not the pooling advanced optimization strategy will be available in the Plan Options window.
9	MST: Mileage engine available	Yes	Indicate whether or not the distance engine such as PC Miler is available.
10	MST: Internal Distance UOM in Mile	--	<p>Indicate the conversion ratio between the Unit of Measure selected in the plan creator's User Preferences and Mile (unit of distance). This enables conversion of Euclidean distance, which is calculated in miles by the planning engine, to the plan creator's unit of measure.</p> <p><b>Note:</b> This profile must be set to the unit of measure you're your instance uses to represent one mile. Even if you always work in metric or other distance units, you should set up a UOM representing one mile and set up the conversion factors between this UOM and your metric distance units. This is needed because the methodology used to derive distances from latitudes and longitudes uses constants that produce distances in miles. Distances in other UOMs will only be produced by conversion from these distances in miles. Even if you expect to use distance determination software or otherwise populate the distance table for every origin-destination pair you will work with, it is still suggested that you do this. There are many reasons why you might need a distance for an origin-destination pair that is not present in the distance table and having the latitude/longitude-based approximations fully functional will prevent errors in those cases.</p>

Serial Number	User Profile Name	Default	Description
11	MST: Workflow On	--	Indicate whether or not workflow must be enabled. If set to Yes, the Workflow is enabled and notifications will be sent, otherwise the workflow is disabled.

#### Source Setup to Launch a Plan

Serial Number	User Profile Name	Default	Description
1	MST: Source Setup Required	N	Set the value of this profile to Y before the first time you launch a plan. After you launch the plan for the first time, this profile will automatically be set back to N. You need not modify this profile going forward. The value will remain as N. On the contrary, for a brand new environment, the initial value will typically be Y. If the environment is copied, the system will handle the profile value intelligently and no user intervention is required. However, you must make sure that for a first time use, the profile value is set to Y.

#### Profile Options Editable Using the Transportation Planning Administrator Responsibility

You can edit the following profile options using the seeded Transportation Planning Administrator responsibility. The values set by the System Administrator appear as the default values and the default value field in the System Profile Values window remain disabled. You can specify a value in the User value field that will override the default value.

The following table discusses about the profile options editable using the seeded Transportation Planning Administrator responsibility.

Serial Number	User Profile Name	Default	Description
1	MST: Calendar Extra Days	90	Indicate the number of extra days from the end of the planning horizon until which the planning engine will consider calendar and capacity (number greater than 0).

Serial Number	User Profile Name	Default	Description
2	MST: Default Carrier Calendar Code	NULL	Indicate the calendar that the planning engine must use as the carrier calendar when evaluating layover cost. If this is set to Null, the planning engine uses Monday through Friday, 8:00 a.m. to 5:00 p.m. as the default layover calendar.
3	MST: Online Planner Idle Time	--	Indicate the number of minutes the Online Planner will wait after any activity before shutting down automatically. The planning engine counts this time from the last user action serviced by the Online Planner.
4	MST: Automatic Exception Recalculation	Yes	<p>If set to Yes, the planning system recalculates all exceptions after every user action that causes permanent changes. The exceptions produced by these user actions will appear in plan exceptions.</p> <p>If set to No, you must invoke Re-Calculate Exceptions to obtain exceptions produced by user action changes.</p>
5	MST: Automatic KPI Recalculation	Yes	<p>If set to Yes, the planning engine recalculates key performance indicators after every user action that effects a permanent change to the plan.</p> <p>If set to No, you must invoke Re-run KPIs to obtain key performance indicator values changed by user actions.</p>
6	MST: Item description for snapshot	--	During snapshot, the engine will capture only the items matching the value specified here. For example, if you specify "A%" for this profile option, the system will capture only those items whose name start with "A".
7	MST: Number of days added for routing firm trips	7 days	Indicate the time beyond the planning horizon up to which routing firm trips, with consolidation, deconsolidation, or cross-dock arrival times within the time period, are captured in the snapshot.

Serial Number	User Profile Name	Default	Description
8	MST: Inbound Freight Condition	All	<p>Set to All if you want to plan for inbound delivery lines with any freight terms. In this case, Oracle Transportation Planning snapshots all the delivery lines regardless of their freight terms.</p> <p>Set to Collect if you want to plan for only those delivery lines having the freight terms of Collect.</p>
9	MST: Outbound Freight Condition	All	<p>Set to All if you want to plan for outbound delivery lines with any freight terms. In this case, Oracle Transportation Planning snapshots all the delivery lines regardless of their freight terms.</p> <p>Set to Ignore Collect and Third Party Billing if you want to plan only for delivery lines not having the freight terms of Collect and Third Party Billing. In this case, Oracle Transportation Planning ignores the delivery lines with Collect and Third Party Billing freight terms and snapshots the rest of the delivery lines.</p>
10	MST: DropShip Freight Condition	All	<p>Set to All if you want to plan for drop-ship delivery lines with any freight terms. In this case, Oracle Transportation Planning snapshots all the drop-ship delivery lines regardless of their freight terms.</p> <p>Set to Third Party Billing if you want to plan for drop-ship delivery lines having the freight terms of Third Party Billing only. In this case, Oracle Transportation Planning ignores the delivery lines in other statuses.</p>
11	MST: Default Pallet	--	Indicate the pallet item that Oracle Transportation Planning must use for pallet count calculations if no item-pallet relationship is defined.
12	MST: Maintain User Edits	None	Indicate the default setting of the flag that determines to what degree the engine respects the user edits. Values are None, Firmed, and All.



Serial Number	User Profile Name	Default	Description
13	MST: Allow removal of deliveries from routing firm trips	Yes	Indicate the default setting of the flag that determines whether the engine can remove the non-firmed deliveries from the routing firmed trips.
14	MST: Contact Email Address	--	Indicate the contact email address for use in reports.
15	MST: Contact Name	--	Indicate the contact name that must appear in reports.
16	MST: Contact Phone Number	--	Indicate the contact phone number that must appear in reports.
17	MST: Department Name	--	Indicate the department name that must appear in reports.
18	MST: Include Historical Trips for Carrier Commitments	All	<p>Specifies the types of historical trips that Oracle Transportation Planning considers when calculating progress toward carrier commitments. Values are:</p> <ul style="list-style-type: none"> <li>• All: Considers all historical trips</li> <li>• Firm Only: Considers only firmed historical trips</li> </ul>

## Step 24: Set Up Global Preferences

You define global preferences in the following categories: General, Key Performance Indicators, and Exceptions.

### General Global Preferences Setup

Set up general global preferences on the General tab in the Global Preferences window. You can access this window and edit the setup preferences using the Transportation Planning Administrator responsibility. You can access this window in a View-Only mode using the seeded Transportation Planner responsibility.

On the General tab, you specify timing parameters, layover parameters, and default loading and unloading rates that the engine must use for plans that your users create.

### Global Preferences Window: General Tab

Global Preferences

General KPIs Exceptions

**Timing Parameters**

Day Start Time 09:00 AM

**Layover Parameters**

Minimum Layover Time 10 Hours

Maximum Driving Time Per Day 11 Hours

Maximum On-Duty Time Per Day 14 Hours

Maximum Distance Per Day 600 Miles

**Default Loading and Unloading Rates**

	Loading	Unloading		
Palletized	3500	3500	Cubi...	/Hour
Non-Palletized	3500	3500	Cubi...	/Hour

## Timing Parameters

### Day Start Time

Day Start Time indicates the starting time of the planning cycle. The seeded system default value is 00:00. The plan end time always defaults to 23 hours and 59 minutes after the Day Start Time. For example, if a planner has a planning start date of 13-Sep-03 and end date of 15-Sep-03 and the Day Start Time is 00:00, this translates to a planning horizon of 13-Sep-03, 00:00 to 15-Sep-03, 23:59. Only the Transportation Planning Administrator or one with access to the Global Preferences window can change the day start time, which applies to all transportation plans.

A change in the Day Start Time will not apply to plans that you have already run. For the new settings to take effect, you must re-run these plans.

## Layover Parameters

The Transportation Planning Administrator can specify the following layover regulations:

- Minimum layover time in hours
- Maximum driving time per day in hours
- Maximum on-duty time per day in hours

- Maximum distance per day in distance unit of measure

You can only enter positive values for all of the above. For example, you can enter values, such as 8 hours, 9.5 hours, or 100 miles.

These attributes capture the layover times for the drivers as regulated by governmental rules and regulations. For example, in the United States, the Department of Transport stipulates that drivers may not do the following:

- Drive more than 11 hours following 10 hours of duty
- Drive beyond the 14th hour after coming on-duty following 10 hours off-duty
- Drive after 60 or 70 hours on-duty in 7 or 8 consecutive days.

On the Global Preferences window, these regulations can be specified as follows:

- Maximum driving time per day: 11 hours
- Maximum on-duty time per day: 14 hours
- Minimum layover time: 10 hours

The layover regulations you specify at a global level apply to all truckload carriers and services. You can define these rules at a carrier level also, on the Mode Limits tab in the Carriers window. Use the Manufacturing and Distribution Manager responsibility to access the Carriers window. The carrier level rules override the global preferences and can only be more restrictive than the global rules:

- Minimum layover time at a carrier level is greater than or equal to global minimum layover time
- Maximum driving time per day at a carrier level is less than or equal to global maximum driving time per day
- Maximum on-duty time per day at a carrier level is less than or equal to global on-duty time per day

### **Default Loading and Unloading Rates**

The Transportation Planning Administrator can specify the default loading and unloading rates at a facility expressed as pieces, pallets, cube (mt3, ft3), or weight (pounds, kilograms, tons) per unit time (hours, days, minutes). You can specify the following:

- Loading and unloading rates for palletized shipments: expressed as pieces, cube, weight, or pallets per unit time
- Loading and unloading rates for non-palletized shipments: expressed as pieces, cube, or weight per unit time

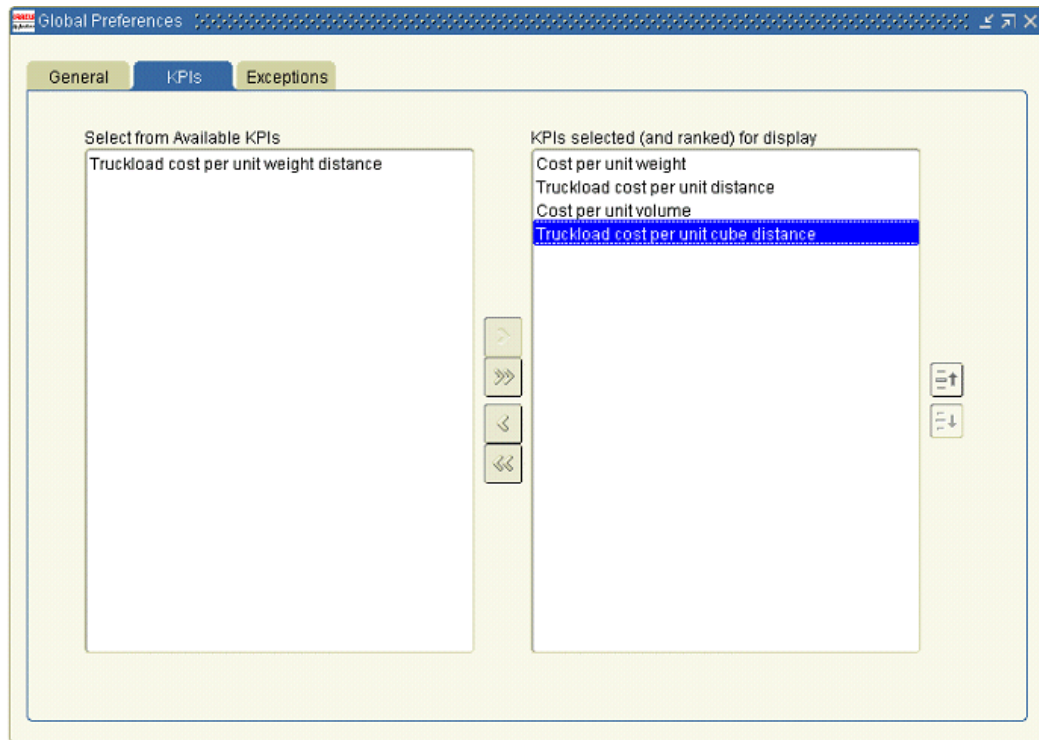
The system populates these default loading and unloading rates for any facilities that are automatically created. You can edit the default values in the facility records.

**Note:** It is important to define non-zero default loading and unloading rates. If you do not, then any newly created facilities for which you do not manually input the specific data will have undefined loading and unloading rates. If a facility's loading/unloading rates are not defined, then the planning process will assume that zero time is required to load or unload deliveries at the facility. A planned trip with stops that have zero load/unload time may fail to release due to validations in the release process.

### Global Preferences Setup for Key Performance Indicators

You set up Key Performance Indicators using the KPIs tab in the Global Preferences window. Use the seeded Transportation Planning Administrator responsibility to access this window.

#### Global Preferences Window: KPIs Tab



The following Key Performance Indicators are available:

- Cost per unit weight
- Cost per unit volume

- Truckload cost per unit distance
- Truckload cost per unit cube-distance
- Truckload cost per unit weight-distance

Among these, the Transportation Planning Administrator can enable the Key Performance Indicators that are relevant for the shipper and disable the others. The planning engine does not generate the disabled indicators.

By default, all the Key Performance Indicators are in the Select from Available KPIs box. The Transportation Planning Administrator can select the key performance indicators to be generated and displayed by moving the Key Performance Indicator from Select from Available KPIs box to the KPIs Selected (and Ranked) for Display box.

The Transportation Planning Administrator can specify the display order of the selected key performance indicators in the KPIs Selected (and Ranked) for Display box using the arrows. The Planner Workbench Performance window displays the key performance indicators horizontally in the order in which they appear from top to bottom in the selection box.

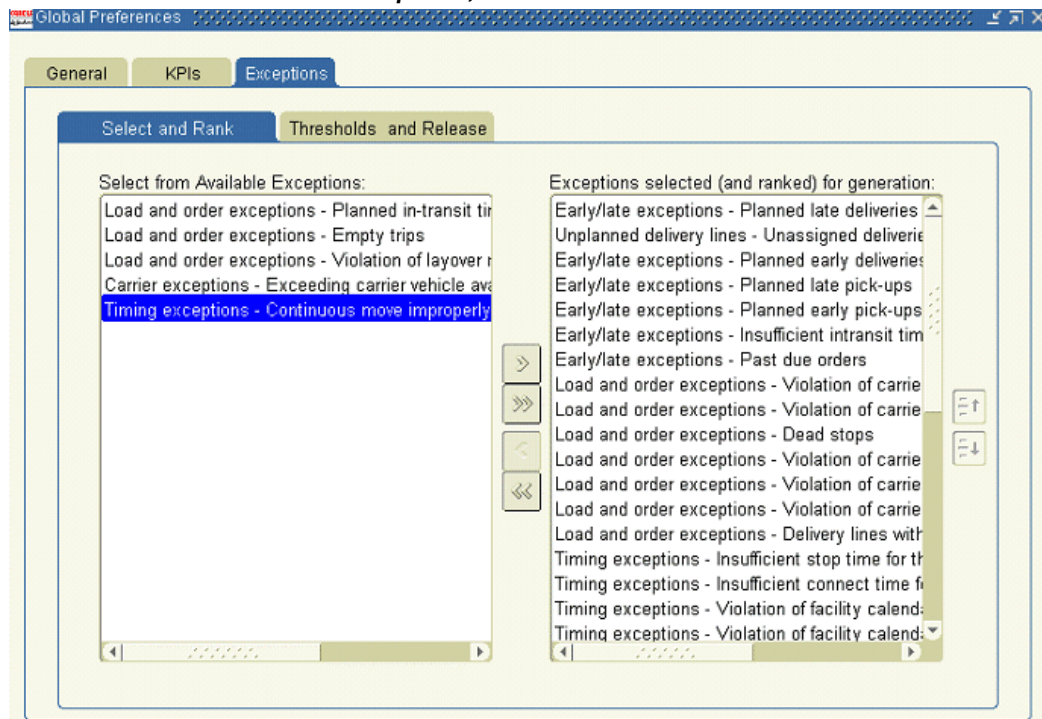
If the Transportation Planning Administrator removes any indicator from the KPIs Selected (and Ranked) for Display box and if certain users have that specific Key Performance Indicator enabled in their settings, then the system generates a warning to the Transportation Planning Administrator.

If the Transportation Planning Administrator chooses to continue, the Key Performance Indicator is disabled by moving to the Select from Available KPIs box. In this case, the users who have enabled this key performance indicator in their settings receive a notification stating that the particular key performance indicator is disabled.

### **Global Preferences Setup for Exceptions**

Exception settings allow you to balance your preference between being adequately informed and being overwhelmed by information. You can set up exceptions on the Exceptions tab in the Global Preferences window. Use the Transportation Planning Administrator responsibility to access this window.

### Global Preferences Window: Exceptions, Select and Rank Tab



The Transportation Planning Administrator can enable the exceptions that are relevant for the host company and disable the others. The planning engine does not generate the disabled exceptions.

By default, you see the complete list of exceptions in the Select from Available Exceptions box on the Select and Rank subtab when you select the Exceptions tab for the first time.

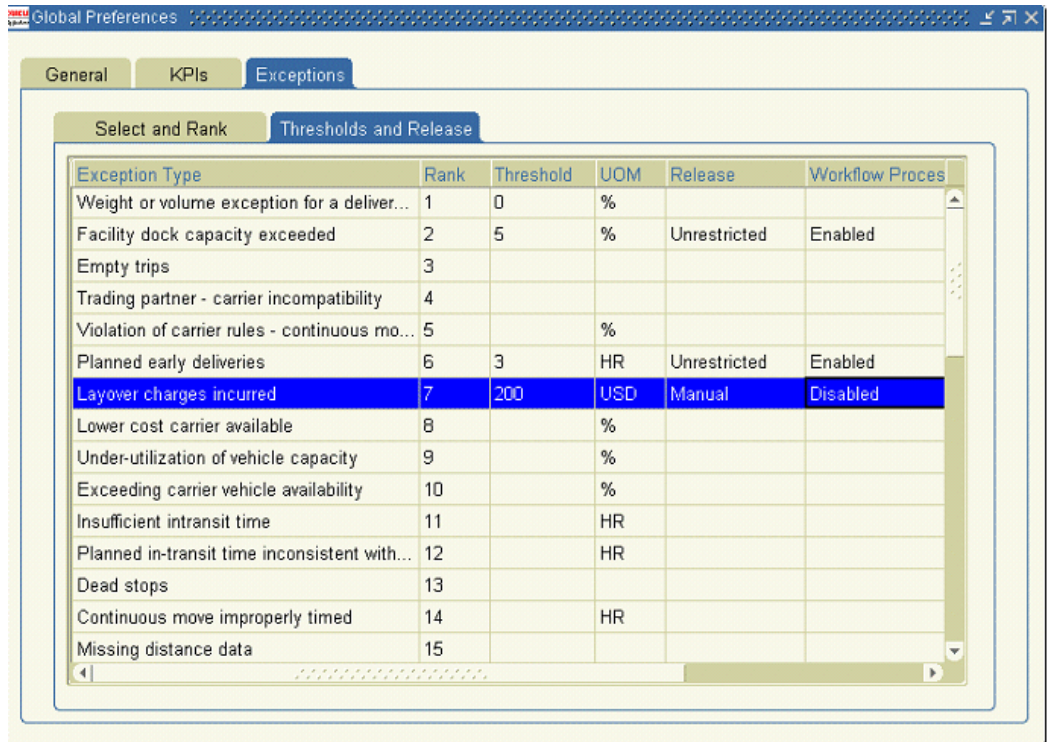
You can select the exceptions that the planning system must generate and display by moving the exception from the Select from Available Exceptions box to the Exceptions selected (and ranked) for generation box.

In the Exceptions selected (and ranked) for generation box, the Transportation Planning Administrator can specify the display order of the selected exception types by using the arrows.

If the Transportation Planning Administrator removes any exception from the Exceptions selected (and ranked) for display box and if certain users have that specific exception enabled in their settings, then the system issues a warning to the Transportation Planning Administrator.

If the Transportation Planning Administrator chooses to continue, the exception is disabled and moved to the Select from Available Exceptions box. In this case, users who have enabled this exception in their systems receive a notification that the particular exception is disabled.

### Global Preferences Window: Exceptions, Thresholds and Release Tab



Exception Type	Rank	Threshold	UOM	Release	Workflow Process
Weight or volume exception for a deliver...	1	0	%		
Facility dock capacity exceeded	2	5	%	Unrestricted	Enabled
Empty trips	3				
Trading partner - carrier incompatibility	4				
Violation of carrier rules - continuous mo...	5		%		
Planned early deliveries	6	3	HR	Unrestricted	Enabled
Layover charges incurred	7	200	USD	Manual	Disabled
Lower cost carrier available	8		%		
Under-utilization of vehicle capacity	9		%		
Exceeding carrier vehicle availability	10		%		
Insufficient intransit time	11		HR		
Planned in-transit time inconsistent with...	12		HR		
Dead stops	13				
Continuous move improperly timed	14		HR		
Missing distance data	15				

The Transportation Planning Administrator can specify thresholds for active exceptions. For example, planners might not want to be alerted when a truck exceeds specified capacity only by 1 unit, but may prefer to be alerted only when the capacity is exceeded by 5% of the truck's effective capacity. In such a case, you can set the threshold for Overutilized Vehicle to 5%. You will then see the Overutilized Vehicle exception for vehicles that exceed effective vehicle capacity by at least 5%.

Note that thresholds apply only to certain exceptions. The Transportation Planning Administrator can change the threshold values as required. If the Transportation Planning Administrator changes the thresholds, then the plans need to be re-launched for the new thresholds to take effect.

**Note:** The UOM column for thresholds in global preferences displays the specific unit of measure for exception types that have absolute thresholds and percentage for those with percent thresholds. However, in the Exceptions Details windows, percentage thresholds are translated to the corresponding absolute units and the window displays these numbers and units.

For example, if the exception type Lower Cost Carrier Available has a threshold of 10% and such an exception is flagged for a trip with a current cost of USD 1250, the exception threshold and unit is displayed

as USD 125. Suppose that the exception type Violation of layover regulation has a threshold of 5% and an exception results because a trip has 11 hours of driving time instead of the allowed 10 hours. The threshold and unit fields show 0.5 hours. In cases where percent thresholds apply, every row in an Exceptions Detail window will have different threshold values.

You can specify the impact of each exception type on the release process by classifying it as follows. You specify these exception type impacts on the Threshold and Release subtab on the Exceptions tab in the Global Preferences window in Oracle Transportation Planning.

1. **Manual:** A user can only manually release trips that have any exceptions of exception types in this status. You cannot auto-release such trips.
2. **Unrestricted:** A user can auto-release as well as manually release trips that only have exceptions of exception types in Unrestricted status.

#### Exception Statuses and Associated Workflow

For information on exception statuses and associated workflows, see Exception Statuses, page 10-8 and Exception Workflows, page 10-8.

## Step 25: Set Up User Preferences

You set up User Preferences in the following categories: General, Key Performance Indicators, Exceptions, and Map.

Set up user preferences on the User Preferences window in Oracle Transportation Planning. To access the User Preferences window, use the seeded Transportation Planner responsibility.

### General User Preferences Setup

On the General tab in the User Preferences window, specify the units of measure you want to use for your plans, your Planner Workbench preferences, and your cost allocation parameters.



### User Preferences Window: General Tab

**General** | KPIs | Exceptions | Map

---

**Plan Units of Measure**

These unit of measures apply to each plan you create:

Weight UOM: **Kilogram**

Volume UOM: **Cubic foot**

Distance UOM: **Mile**

Dimension UOM: **Kilometer** (This unit of measure applies to length, width, and height.)

Currency UOM: **US dollar**

---

**Planner Workbench**

Plans Displayed on Tree: **Plans Run** Not Older Than  Days

View at Workbench Start: **Trips**

Advanced Navigation Enabled: **Yes**

Window Usage: **Reuse when open** (Only applies to TL, LTL, Parcel, and CM Details windows.)

Font Size: **Standard**

---

**Cost Allocation Parameters**

Truckload Stop Allocation Basis: **Delivery stops** (Applies to each plan you create.)

### Plan Units of Measure

You define the Units of Measure Classes and Units of Measure using the standard Units of Measure windows. You specify the default Units of Measure Classes and default Units of Measure that Oracle Transportation Planning must use on the Global Shipping Parameters window in Oracle Shipping Execution. See Step 14: Set Up Global Parameters, page 4-18 for more information.

The global values are the default values for all users. Individual users can change the Unit of Measure. Note that you cannot save the User Preferences if the Unit of Measure Classes are not defined in the Global Shipping Parameters window. In such a case, the system issues a warning.

The User Preferences General tab shows the following Units of Measure:

- Weight Unit of Measure: for example, Kilograms or Pounds
- Cubic Volume Unit of Measure: for example, Cubic meters or Cubic feet
- Distance Unit of Measure: for example, Miles or Kilometers
- Currency Unit of Measure: for example, USD or FBP
- Dimensions Unit of Measure: for example, Inches or Feet

The planning system uses the dimension unit of measure for converting various item dimensions on the source system to one base dimension for planning.

For a plan created by a specific user, the system uses the plan units of measure as specified in the creator's user preferences. The plan always uses this base unit of measure. For example, suppose that User 1 creates Plan 1 and specifies the base unit of measure to be pounds for the weight unit of measure class. For planning purposes, all the orders in the system are planned in pounds, which is the specified base unit of measure. If User 2 accesses Plan 1, at any point in time, the system displays the information only in User 1's (the plan creator's) unit of measure preferences. Even if User 2 has plan weight unit of measure preference of kilograms, if User 2 views or modifies Plan 1, the unit of measure remains as pounds.

If you change your plan unit of measure preferences, the new units of measure are reflected in the new plans that you create from then on. For already existing plans to reflect the changes, you must perform a re-snapshot and run the plan again. Also, for existing plans, you must modify the parameter values that you specified in the Plan Options window so that the values correspond to the new units of measure specified in the User Preferences window. This is because the snapshot process interprets the parameter values specified in the Plan Options window only based on units of measure specified in the creator's User Preferences.

For example, suppose you have a distance unit of measure of miles and you set the Stop Neighborhood Radius on the Optimization tab in the Plan Options window to 100. The system interprets this value as 100 miles. If you now change your distance unit of measure to kilometers and re-run the plan, the system interprets this parameter as 100 Km. If you want to preserve the underlying meaning of the parameter, you must change its value to 160 (because 160 Km is equal to 100 miles) in the Plan Options window.

#### **Note 1: Currency Unit of Measure**

The Global Shipping Parameter value for Currency Unit of Measure defaults to the User Preferences. However, an individual user can change this value.

Based on the plan creator's user preferences, Oracle Transportation Planning converts the currencies from Oracle Transportation Execution into one base Unit of Measure currency on Oracle Transportation Planning.

The conversion from Oracle Transportation Execution's global parameter to the planning system's user base currency is based on a defined `gl_daily_rates` table. This table contains the following columns: From currency, To currency, Conversion type, and Conversion date. The `gl_daily_rates` table is available under standard Oracle Financials responsibilities.

Conversion type can be corporate rate, spot rate, or user defined. For Oracle Transportation Planning, the system assumes the conversion type to be corporate.

By default, the conversion date is the current system date.

If the conversion rate is not available for the system date, the system checks for the last available conversion date. If you have not defined currency conversion for a pair of currencies, Oracle Transportation Planning uses a 1:1 conversion and logs a warning in the snapshot process.

At the time of release, Oracle Transportation Planning converts the currency back into the Oracle Transportation Execution currency. This happens at a trip level. For example, if, trip 1 with the currency Dollar on the planning system is assigned to carrier 1 with rate chart defined in Pesos on Oracle Transportation Execution, then the release process performs the appropriate conversion for the pricing. The cost allocation to delivery legs and deliveries in Oracle Transportation Execution is on the basis of the specified currency in Oracle Transportation Execution.

**Note 2: Weight and Volume Units of Measure for Deliveries, Delivery Details, and Vehicle Trips**

The behavior of Oracle Transportation Execution and Oracle Transportation Planning with Units of Measure is as follows:

- **Oracle Transportation Execution:** Oracle Transportation Execution can have different units of measure for different deliveries that are on the same vehicle trip. When building a vehicle trip, the system picks the unit of measure from the first delivery assigned to that vehicle trip. Oracle Transportation Execution creates a delivery with primary Unit of Measure of Unit of Measure Class defined for the ship from organization.
- **Oracle Transportation Planning:** Oracle Transportation Planning stores eligible deliveries, delivery lines, vehicle trips, and stops in the base unit of measure of the unit of measure class defined in Oracle Transportation Planning user preferences. The system converts the unit of measure during the snapshot process.

The planning engine creates deliveries and vehicle trips in the base unit of measure of the unit of measure class defined in Oracle Transportation Planning.

At the time of release of each delivery, the unit of measure is converted to the base unit of measure for the delivery details as defined in the Oracle Transportation Execution and Oracle Shipping Execution parameters.

For firm trips that are captured from the transportation execution system, a similar conversion takes place from Oracle Transportation Planning's base unit of measure to the primary unit of measure of the trip in Oracle Transportation Execution. This unit of measure applies to the trip legs and stops only.

For trips that were created on Oracle Transportation Planning, the system picks up the unit of measure from the first delivery assigned to that vehicle trip.

**Note 3: Units of Measure Conversions and Value Round up**

Oracle Transportation Planning converts values from one unit of measure to another unit of measure. In the process, the system rounds up certain values. For example, consider that Oracle Transportation Planning captures a delivery line that is 30 lbs from the execution system. On Oracle Transportation Planning, suppose that the default weight unit of measure is kilograms. The planning system converts this delivery line into kilograms as 13.63636 Kg. The planning engine and the user interface handles the conversion as follows:

- Oracle Transportation Planning Engine: The engine stores the fractional numbers to maintain the accuracy of the computation.
- User Interface: Specify the number of decimal points that the user interface must display for values. This is a standard FND profile option for a number format. For example, the number format can be 10,000.00, 10000.0, or 10,000.

The user interface display for the fractional number is based on the user preference as explained previously. However, minor inconsistencies may appear in the user interface due to the cumulative rounding errors. For example, consider three deliveries of 13.56 Kg each in a truck. The user display preference is in the format 10000. The user interface shows the following:

- Delivery 1: 14 Kg
- Delivery 2: 14 Kg
- Delivery 3: 14 Kg
- Truck departure weight: 41 Kg after rounding  $13.56+13.56+13.56 = 40.68$
- Truck peak utilization: 0.4068 if capacity is 100 Kg

The sum of the individual deliveries is 42 Kg, which is more than the Key Performance Indicator value for that trip. If you want more precision, you can change the user interface display preferences.

#### **Planner Workbench Preferences**

- Plans Displayed on Tree: Choose the plans that the Planner Workbench will display from the following options:
  - All Plans
  - Plans Run
  - Plans Not Run

For any of these selections, you can limit the display to only those plans not older than a specified number of days. For example, you can specify plans run, not older than 17 days. The navigation tree will display only those plans that have already run and for which the current date minus the plan end date is less than or equal to 17 days. If you want to see all of the plans, leave this field blank.

- View at Workbench Start: You can specify the default viewing hierarchy to be used when you launch the Transportation Planner Workbench. The options for this preference are: Trips, Suppliers, Queries, Orders, Facilities, Exceptions, Customers, and Carriers.

- If you set this parameter to any option other than Queries, the workbench opens with the navigation tree showing the Plans tab.
- If you set this parameter to Queries, the workbench opens with the navigation tree showing the Queries tab. In this case, in a Planner Workbench session, when you switch the tree to the Plans tab for the first time, it will be arranged according to the Trips hierarchy. Any time that you return from the Queries tab to the Plans tab, whether the preference for view by is Queries or not, the tree is arranged in the view that it was in when you switched over from the Plans to the Queries tab.
- Advanced Navigation Enabled: Set this parameter to ☐Yes☐ to have the Planner Workbench start up with the Advanced Window Control feature enabled. Set it to ☐No☐ to have the workbench start up with Advanced Navigation disabled.

Note that, regardless of your selection in the User Preferences window, you can still enable or disable Advanced Navigation manually at any time during a workbench session. You can do this using the Enable Advanced Navigation check box in the Tools menu.

- Window Usage: This specification applies to Truckload Details, Less-than-Truckload Details, Parcels Details, and Continuous Move Details windows. You can specify whether certain windows must refresh, always open in a new window, or open in a new window on the basis of the push-pin.
  - Reuse when open: If, for example, you have a Truckload Details window open for one trip and you access another truckload trip's detail, the existing Truckload Details window is refreshed with the new information.
  - Always open new: If, for example, you have a Truckload Details window open for one trip and you access another truckload trip's detail, a new Truckload Details window opens for the newly selected truckload. Note that the maximum number of windows of a single type that you can open is four.
  - Open based on pin: If you have a Truckload Details window open, have the push pin selected, and you access another truckload trip's detail, selecting this option opens a new window for the second truckload detail. If you have not selected the pushpin, then the existing window gets refreshed with the new truckload trip's information.
- Font size: You can specify whether the system must render the workbench screens with standard or smaller text. Smaller text allows spread table row heights to decrease and maximizes the number of rows of viewable data.

### Cost Allocation Parameters

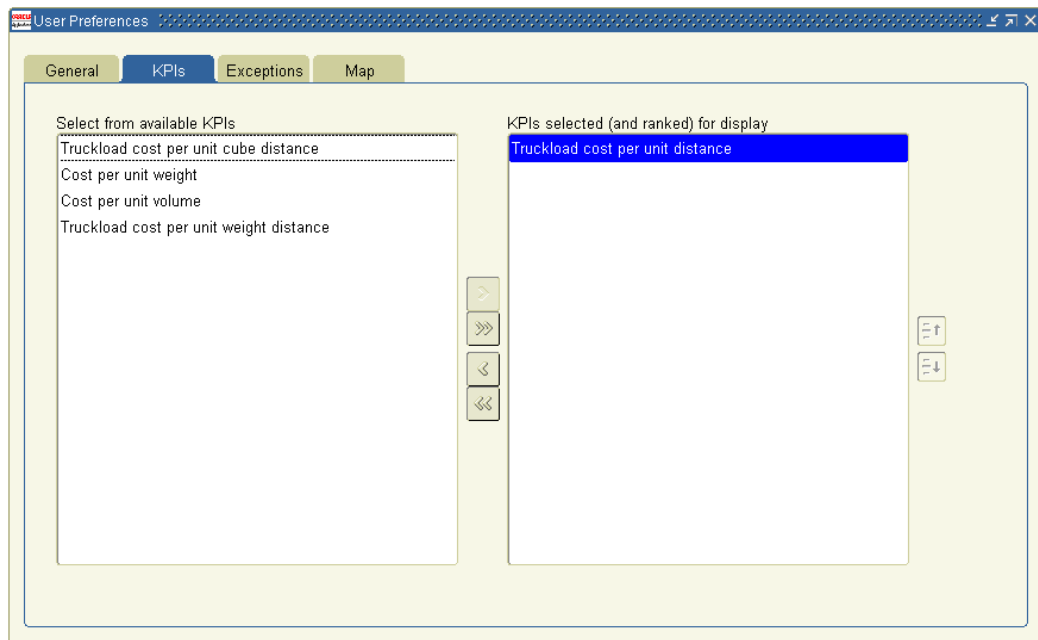
Truckload Stop Allocation Method: You can specify the truckload stop allocation

method to be based on delivery stops or pick-up stops. The Oracle Transportation Planning system uses truckload cost allocation to generate and display reports. The Truckload Stop Allocation Method applies to each plan that you create. If you change the truckload cost allocation method, then the system considers the new allocation method for new plans that are created by the planner. For existing plans, you must perform a data re-snapshot and launch the plan again for the new cost allocation method to take effect.

### User Preferences Setup for Key Performance Indicators

Specify your key performance indicator settings on the KPIs tab on the User Preferences window in Oracle Transportation Planning. Access the User Preferences window using the seeded Transportation Planner responsibility.

#### User Preferences Window: KPIs Tab



When you first select this tab, you see the list of key performance indicators enabled by the Transportation Planning Administrator in the Global Preferences Key Performance Indicators tab in the Select from Available KPIs box.

From among these key performance indicators, you can select those that you want to view on the Planner Workbench by moving the key performance indicators into the KPIs Selected (and Ranked) for Display box. You can move indicators that you do not want displayed on the Planner Workbench back to the Select from Available KPIs box.

By default, the system ranks the key performance indicators in the order specified in the global preferences by the Transportation Planning Administrator. You can change this order to your preference. The Planner Workbench displays the key performance indicators horizontally in the same order as they appear from top to bottom in the KPIs

Selected (and Ranked) for Display box.

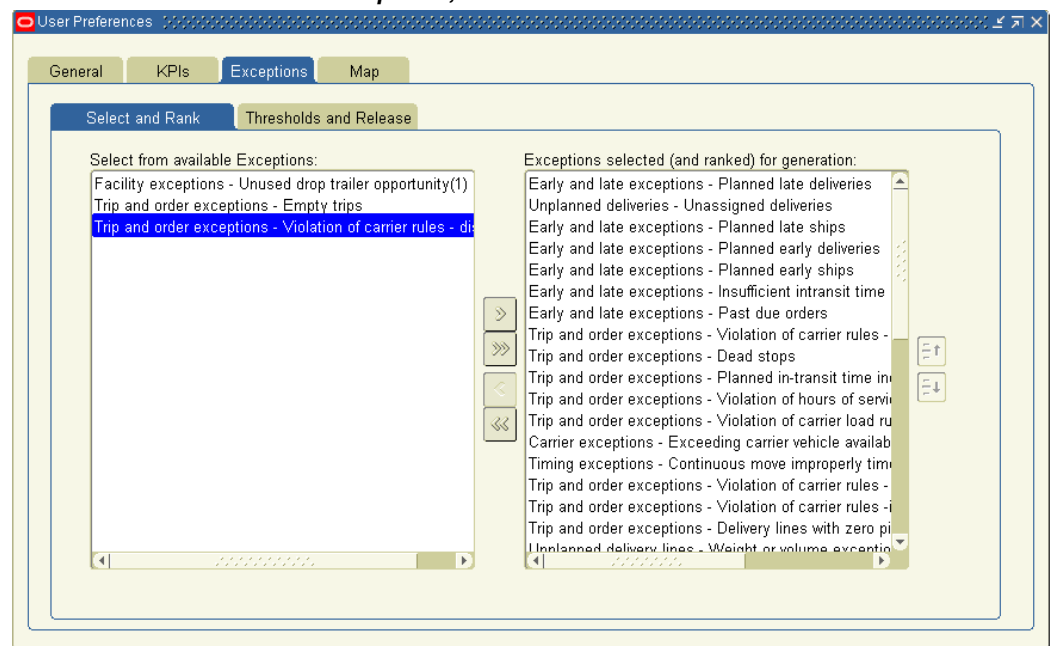
If the Transportation Planning Administrator adds new Key Performance Indicators to the list, then they appear in the User Preference: KPIs Selected (and Ranked) for Display box and are ordered after your existing key performance indicators display order.

If the Transportation Planning Administrator removes any key performance indicator from the KPIs Selected (and Ranked) for Display box and you have that specific key performance indicator enabled in your user settings, then the system issues a warning to the Transportation Planning Administrator. If the Administrator still chooses to disable the key performance indicator, then it is disabled and you will not be able to view this key performance indicator.

### User Preferences Setup for Exceptions

Specify your exception generation preferences on the Exceptions tab on the User Preferences window. You can access the User Preferences window using the seeded Transportation Planner responsibility.

#### ***User Preferences Window: Exceptions, Select and Rank Tab***



When you first select the Exceptions tab in the User Preferences window, you see the list of exceptions enabled by the Transportation Planning Administrator in the Global Preferences Exception settings in the Select from Available Exceptions box.

From among these exceptions, you can select the exceptions you want displayed on the Planner Workbench by moving them into the Exceptions selected (and ranked) for generation box. You can move any exceptions that you do not want to display back to the Select from Available Exceptions box.

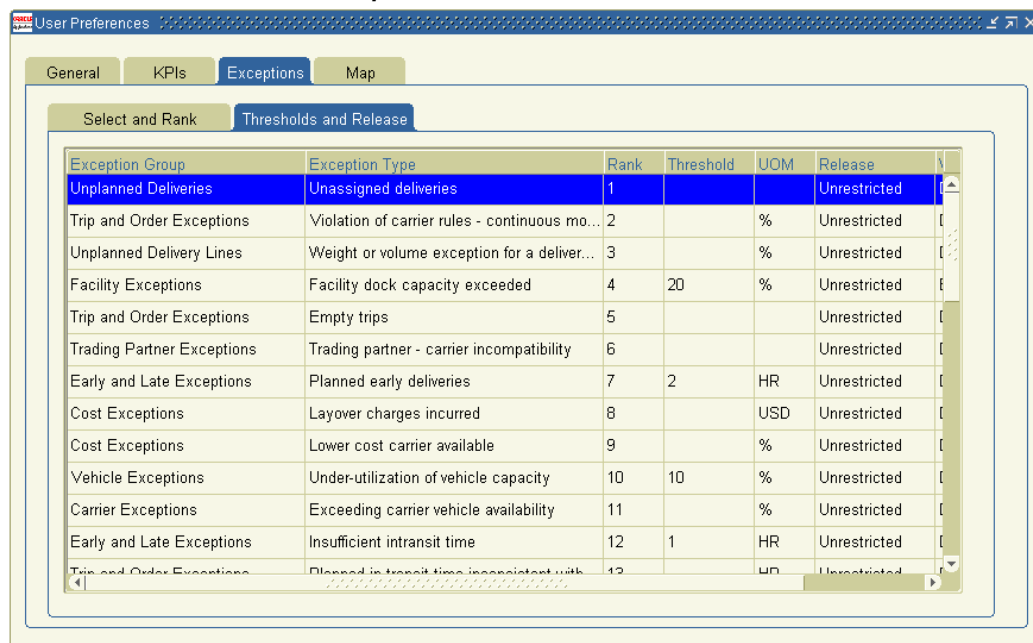
By default, the system ranks the exceptions in the global preference order specified by the Transportation Planning Administrator. You can change this to the order of your preference.

If the Transportation Planning Administrator adds new exceptions to the list, then the exceptions appear in the User Preference Exceptions in the Exceptions selected (and ranked) for generation box after your existing exception display order. You also see a notification that a new exception is enabled.

If the Transportation Planning Administrator removes any exception from the Exceptions selected (and ranked) for generation box and if you have that specific exception enabled in your user preferences, then the system issues a warning to the Transportation Planning Administrator. If the Transportation Planning Administrator chooses to continue, the exception is disabled and you will not be able to view this exception.

On the Thresholds and Release tab on the User Preferences Exceptions tab, you can view the thresholds specified by the Transportation Planning Administrator, the release impact of exception settings, and associated workflow processes. You cannot edit any of these settings.

#### **User Preferences Window: Exceptions, Thresholds and Release Tab**



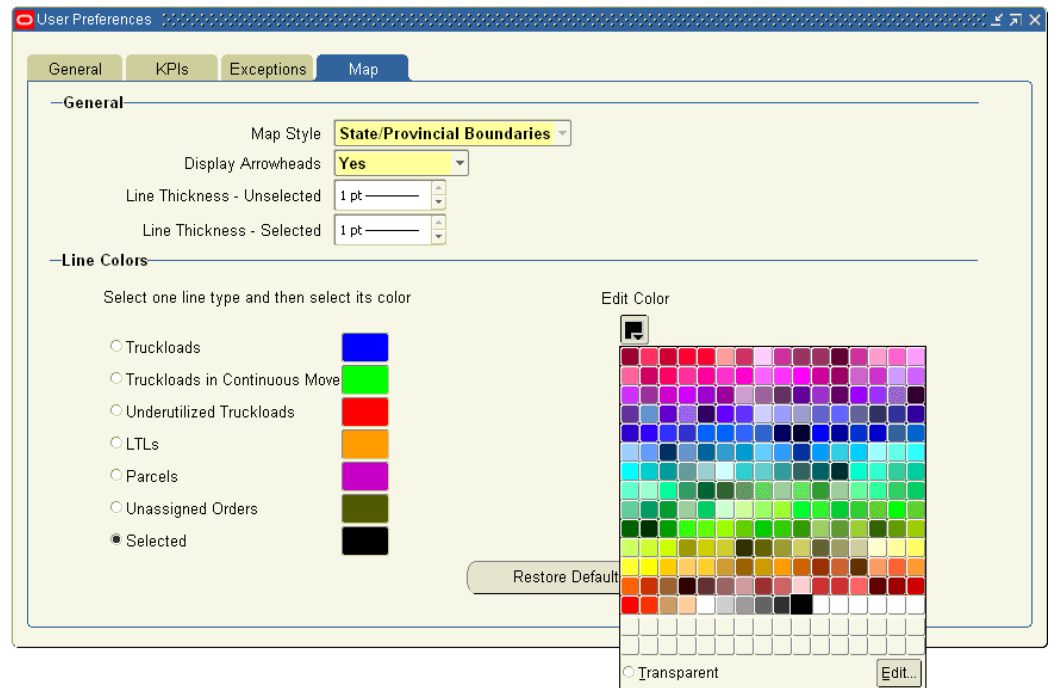
Exception Group	Exception Type	Rank	Threshold	UOM	Release
Unplanned Deliveries	Unassigned deliveries	1			Unrestricted
Trip and Order Exceptions	Violation of carrier rules - continuous mo...	2		%	Unrestricted
Unplanned Delivery Lines	Weight or volume exception for a deliver...	3		%	Unrestricted
Facility Exceptions	Facility dock capacity exceeded	4	20	%	Unrestricted
Trip and Order Exceptions	Empty trips	5			Unrestricted
Trading Partner Exceptions	Trading partner - carrier incompatibility	6			Unrestricted
Early and Late Exceptions	Planned early deliveries	7	2	HR	Unrestricted
Cost Exceptions	Layover charges incurred	8		USD	Unrestricted
Cost Exceptions	Lower cost carrier available	9		%	Unrestricted
Vehicle Exceptions	Under-utilization of vehicle capacity	10	10	%	Unrestricted
Carrier Exceptions	Exceeding carrier vehicle availability	11		%	Unrestricted
Early and Late Exceptions	Insufficient intransit time	12	1	HR	Unrestricted
Trip and Order Exceptions	Planned intransit time inconsistent with	13		HR	Unrestricted

#### **User Preferences Setup for Map**

Specify your map settings on the Map tab on the User Preferences window. You can access the User Preferences window using the seeded Transportation Planner responsibility.



### User Preferences Window: Map Tab



#### General

You can specify the following general map preferences:

- Map Styles: The only setting currently available displays the map with State or Provincial Boundaries.
- Display Arrowheads: Specify whether or not you want arrowheads displayed on the Map window.
- Line Thickness Selected: Specify the line width of a selected element on the Map window.
- Line Thickness Unselected: Specify the line widths of the various elements on the Map. This is the thickness of an element when it is displayed on the map and is not selected.

#### Line Colors

You can specify colors from a standard color palette for the following:

- Truckload: Default color: Blue, 0000FF
- Truckloads in continuous moves: Default color: Green (00FF00)
- Under-utilized truckloads: Default color: Red (FF0000)

- Less-than-Truckload: Default color: Orange (FF9B00)
- Parcel: Default color: Purple (C000C0)
- Unassigned orders: Default color: Brown (825C00)
- Selected items: Default color: Black (000000)

After having changed the colors, you can return to the initial default colors by choosing the Restore Defaults button.

You can edit the colors that are available on the color pallets. When you click Edit, the system launches the Color Palette Editor. If you click the Edit Custom Colors button, the system launches the Color Chooser.

**Note:** You must save the Global and User Preferences at least once before creating any plan.

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## Defining Plans

This chapter covers the following topics:

- Overview of Defining Plans
- Creating a Plan
- Specifying Plan Options
- Viewing Plan Options
- Editing Plan Options
- Copying a Plan
- Purging a Plan
- Launching a Plan
- Defining User-Specific Default Plan Options
- Constraints and Penalty Based Planning Engine Behavior

### Overview of Defining Plans

Oracle Transportation Planning considers consolidation opportunities, such as pooling, multi-stop truckloads, and continuous moves. It also considers costs, constraints, and penalties. This facilitates optimum trade-offs among various contributing objectives involved in operational planning. Planning objectives may include the following:

- Minimize transportation costs through load consolidation, continuous moves, and selection of best modes and carriers
- Improve on-time delivery
- Maximize compliance with usage of preferred carriers and utilization of volume-based pricing

A planner accomplishes these planning objectives by specifying plan options. After

specifying the plan options, the planner launches the plan. The planning engine run output is the consolidated shipments with specific route, mode, carrier, service, and vehicle selection according to the plan objectives set up by the planner.

This chapter discusses in detail the procedures that you must follow to create a plan and to specify its objectives. The chapter describes the various parameters to consider in specifying your plan options and the behavior of the planning engine corresponding to these options.

## Creating a Plan

Defining a plan involves first creating a plan record and then specifying the plan options.

### To create a plan:

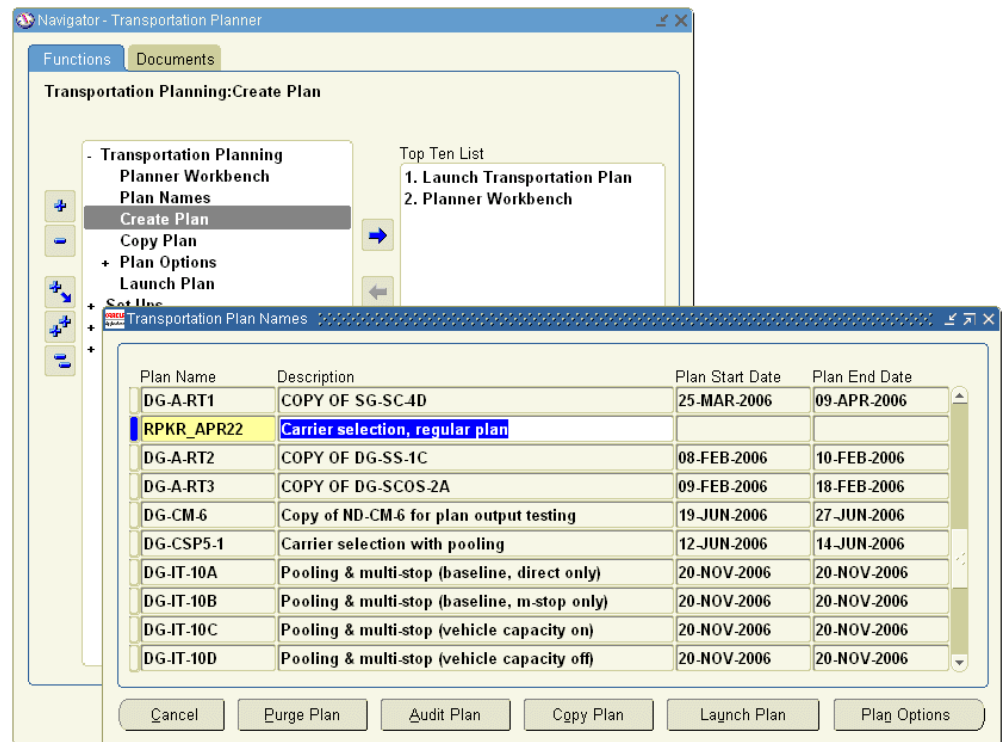
1. In the Transportation Planner Navigator, select Create Plan to launch the Transportation Plan Names window. The Transportation Plan Names window displays any information regarding previously entered plans.

You can also access this window in the following ways:

- On the Transportation Planner Navigator, select Plan Names.
  - On the Planner Workbench, select Define Plans from the Plan menu.
2. Add a new row in the Transportation Plan Names window by selecting New from the File menu. Enter the Name and Description for your new plan.

**Note:** The Plan Start and End Date fields for a new plan are empty and you cannot update these fields in the Transportation Plan Names window. You specify the Plan Start and End Date fields for a plan in the Plan Options window.

### Navigator and Transportation Plan Names Window



3. Click the Plan Options button. The Plan Options window opens.

You can also copy data from an existing plan into a new plan. See 'Copying a Plan,' page 6-42 for more information.

4. In the Plan Options window, the Plan Start and Plan End Dates are pre-populated from the default plan options. See 'Defining User-Specific Default Plan Options,' page 6-47 for more information. Modify the Plan Start and Plan End Dates as desired.

Note that, Plan Start Date must always be in the future, i.e. after the current system date, as the planning engine schedules trips with respect to the Plan Start Date, not the system date. The planner must, therefore, always set the plan start date to be in the future to avoid trips being scheduled to depart in the past. Such trips scheduled for the past cannot be released.

5. Click the Save icon on the toolbar to record the new plan in the database.

If you now view the Transportation Plan Names window, the Plan Start and End Date fields display the dates from the Plan Options window.

After you save the plan record, you cannot change the Plan Name.

Proceed to edit your other plan options if desired. 'Specifying Plan Options,' page 6-

discusses the required procedures and the parameters to consider in specifying plan options.

Also see:

- 'Viewing Plan Options, page 6-41
- 'Editing Plan Options, page 6-41
- 'Copying a Plan, page 6-42
- 'Purging a Plan, page 6-44
- 'Launching a Plan, page 6-44
- 'Defining User-Specific Default Plan Options, page 6-47

## Specifying Plan Options

The following discussion describes the typical business process flow involved in specifying plan options.

**Note:** You can apply default plan options to the current plan. Each user can set up default plan options. See 'Defining User-Specific Default Plan Options, page 6-47 for more information.

1. Select the time horizon and transportation network scope for the transportation plan. This includes the following:
  1. Specify plan start date and end date. The planning engine plans for the orders that are available for shipping during the specified time period.
  2. Select facilities to plan for. You can select all the facilities of the shipper or a subset of facilities.
  3. For each of the selected facilities, specify the types of movements to plan: inbound, outbound, and inter-facility.
  4. Choose whether or not to plan for outside processing and drop-ship scenarios.
2. Select the optimization strategies for the plan. The options you can choose from include mode-carrier selection only, simple consolidation, and advanced consolidation. You can also specify optimization parameters.
3. Specify constraints and penalties. The planning engine applies these constraints and penalties in the optimization process.

4. Specify costs to include in optimization. You may want to select specific costs to include in the optimization process instead of all cost components.
5. Specify auto-release rule set. You can use an Auto-Release Rule Set to automatically release trips and orders after a plan has run successfully. You can define Auto-Release Rules and assign the rules to the Auto-Release Rule Set.

The following sections discuss in detail the required considerations and the procedures in defining various plan options.

- 'Specifying Plan Scope, page 6-5
- 'Specifying Plan Optimization Strategies, page 6-13
- 'Specifying Costs to Consider in Optimization, page 6-22
- 'Specifying Constraints and Penalties, page 6-24
- 'Defining Auto-Release Rules for Planned Trips, page 6-35

Also see, 'Viewing Plan Options, page 6-41 and Editing Plan Options, page 6-41.

**Note:** You can also copy plan options from an existing plan to a new plan. See 'Copying a Plan, page 6-42 for details.

## Specifying Plan Scope

You specify the scope of a plan on the Scope tab in the Plan Options window. The plan scope defines:

1. Plan time horizon
2. Types of movements to plan
3. Facilities to include in the plan

### Plan Time Horizon Selection Considerations

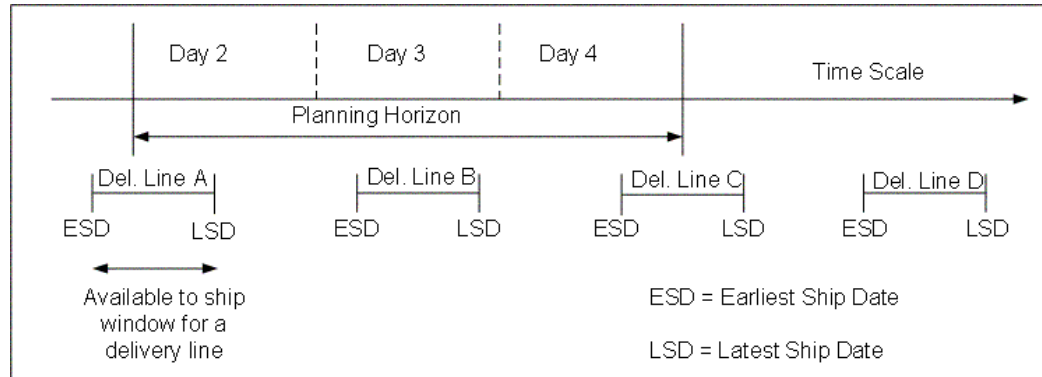
You can specify the plan time horizon for the transportation plan by specifying the Plan Start and Plan End Dates. The planning horizon is a date and time range. The planning system considers all the delivery lines that are available to ship in this time range. See 'Data Snapshot, page 8-1, for details of delivery and delivery line information snapshot into the planning system.

The time between a delivery line's earliest available to ship date and its latest ship date indicates the available to ship window for a delivery line.

The following example illustrates how the planning engine considers a specified plan time horizon.

Suppose that the shipping horizon is three days and the planner is currently planning Day 2 through Day 4. 'Example for Plan Time Horizon Selection, page 6-6 illustrates the scenario.

**Example for Plan Time Horizon Selection**



Delivery line B lies within the planning horizon and the planning engine must consider it. Delivery line D lies outside the planning horizon and the planning engine need not consider it for the current plan horizon. Delivery line A has an earliest ship date outside of the planning horizon, while the latest ship date is within the plan horizon. Delivery line C has an earliest ship date within the planning horizon, while the latest ship date is outside the plan horizon. The planning engine still considers both Delivery line A and Delivery line C because both the delivery lines have an available to ship window that intersects the plan horizon.

The planning engine plans for all the delivery lines in the planning time frame that also match the geographical scope of the plan and returns a route, mode, carrier, service, and vehicle assignment for all the shipments in this time frame.

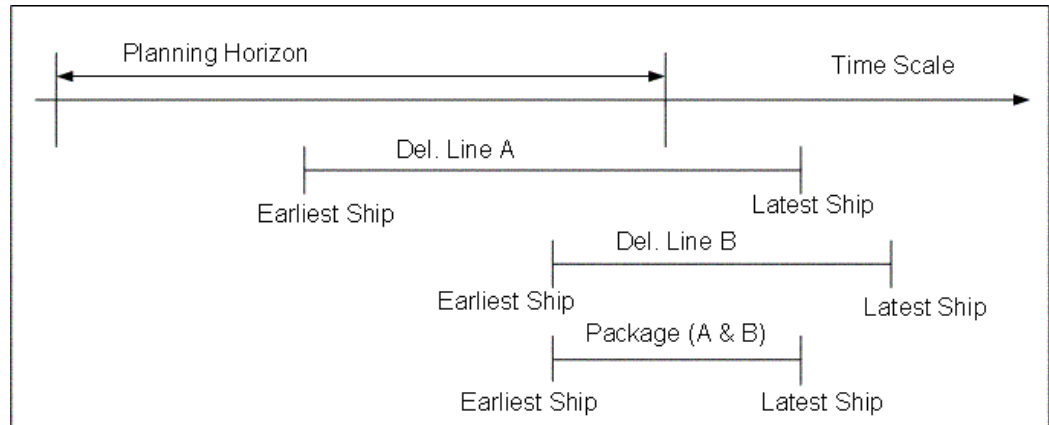
**Date Population for Packaged or Containerized Delivery Lines**

Whether the transportation execution system packages delivery lines automatically or a user manually creates a package, the result is a package comprising multiple delivery lines. In such a case, the dates on the package are derived from the windows of overlap of the earliest and latest ship dates and earliest and latest delivery dates of the delivery lines.

'Date Population for Packaged Delivery Lines, page 6-7 shows an example that illustrates how the system derives the dates for a package.



### ***Date Population for Packaged Delivery Lines***



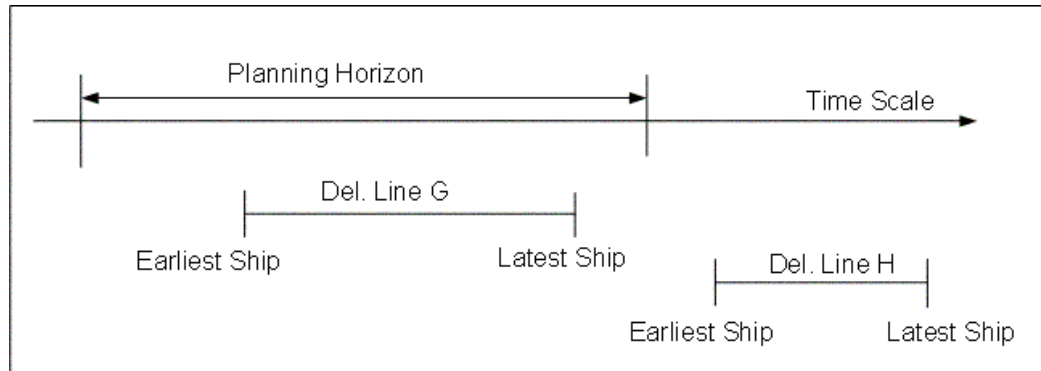
Delivery Lines A and B have Earliest Ship Dates that fall within the planning horizon and share a window of overlap. Since delivery line B has the later Earliest Ship Date and delivery line B has the earlier Latest Ship Date, the package containing delivery lines A and B has the same Earliest Ship Date as delivery line B and the same Latest Ship Date as delivery line A.

Oracle Transportation Planning picks up a package only if its earliest and latest ship dates fall within the planning horizon. If the package is outside the planning horizon, the planning engine ignores any delivery lines in the package even though some of the delivery lines have dates overlapping with the planning horizon.

Do not generate a package for delivery lines that do not have any overlapping shipping windows. If such a package is created, the planning engine cannot derive the shipping dates for the package.

For example, Delivery Lines G and H illustrated in 'Packages Containing Deliveries with Non-Overlapping Shipping Horizons, page 6-8 do not have any overlap in their shipping windows and should not be part of the same package. Delivery line G has Earliest and Latest Ship Dates that are within the planning horizon while delivery line H has Earliest and Latest Ship Dates that both fall outside the planning horizon. Delivery lines G and H have no overlap in shipping windows.

### **Packages Containing Deliveries with Non-Overlapping Shipping Horizons**



### **Ship Sets**

Ship sets include groups of order lines within an order that need to ship together from their common origin to a common destination and have the same scheduled ship date. The earliest and latest ship dates on a delivery line need not be based on the Scheduled Ship Date alone. As a result, delivery lines within the same ship set may have different ship windows. See 'Shipping and Delivery Time Windows for Delivery Lines, page D-1 for more information.

The planning engine captures delivery lines only if their ship time windows overlap with the planning horizon. A ship set may consist of delivery lines, some of which have shipping windows that overlap with the planning horizon, while other delivery lines have shipping windows that do not. In this case, the planning engine may not capture all the delivery lines required for the ship set. The planning system does not generate any exception to alert the violation of a ship set. To avoid planning delivery lines with incomplete information, you must specify a planning horizon that is wide enough to capture all the delivery lines in a specific ship set.

For more information on ship sets, refer to *Oracle Order Management User's Guide*.

### **Time Zone Considerations**

Oracle Transportation Planning considers all the earliest and latest ship and delivery times specified on the input delivery line to be in the server system time zone. The profile option MST: Database Server Location indicates the time zone of the server. The plan output and reports that the planning engine generates show times in local time zones.

For example, consider a company that has plants across the United States, but has its server in the Central Standard Time zone. In this case, the planning system considers the times on different input shipments to be in the Central Standard time, but the plan output and reports use the appropriate local times.

Consider an order shipped from San Francisco, Pacific Standard Time, to New York, Eastern Standard Time. The server is in the Central Standard Time.

The order on the server shows earliest ship date and time as 13-Jan-2003, 09:00 and

latest delivery date and time as 16-Jan-2003, 17:00.

The earliest ship date is 13-Jan-2003, 09:00 Central Standard Time, which is the same as 13-Jan-2003, 07:00 Pacific Standard Time. The latest delivery date is 16-Jan-2003, 17:00 Central Standard Time, which is the same as 16-Jan-2003, 18:00 Eastern Standard Time.

The Oracle Transportation Planning windows and reports show 13-Jan-2003, 07:00 Pacific Standard Time, and 16-Jan-2003, 18:00 Eastern Standard Time.

### **Additional Information on Available to Ship and Delivery Windows**

For a discussion on the following topics, see 'Shipping and Delivery Time Windows for Delivery Lines, page D-1.

- Ship windows and Delivery windows for outbound delivery lines to customers and internal orders that Oracle Order Management controls
- Time adjustments to Earliest Ship Date and Earliest Delivery Date
- Time adjustments to Latest Ship Date and Latest Delivery Date
- Ship windows and Delivery windows for outbound delivery lines to customers on items that Oracle Project Contracts controls
- Ship windows and Delivery windows for inbound delivery lines from suppliers, outside processors, and drop ships that Oracle Purchasing controls

### **Facilities in the Plan**

You can define the scope of the transportation network to plan for by selecting facilities. You can select all the facilities in the shipper's enterprise or a subset of facilities for which to run the optimization. You cannot select supplier or customer facilities. The system plans the orders to or from these facilities based on the company facilities and movement types you select.

**Note:** An arrival set may consist of delivery lines from multiple facilities to a common destination. If you choose to plan for only some of these facilities, then the planning engine captures only those delivery lines that pertain to the selected facilities and have ship time windows that match the planning horizon. The planning engine does not capture other delivery lines in the same arrival set that originate from facilities not selected in the plan scope. The planning engine may not, thus, capture the complete arrival set information for planning.

### **Logistics Flows for which to Plan**

For each facility you select, you need to select the types of movements to plan. The logistics flows you can select include the following:

- Intra-Company moves
  - inbound from company facilities
  - outbound to company facilities
- Inbound from suppliers
- Outbound to customers

You can also enable planning of Outside Processing and Drop Ship moves. Outside processing describes a step in the manufacturing process that an outside vendor performs. For shippers who are interested in the transportation planning of outside processed items, Oracle Transportation Planning can plan the inbound or return movements. Drop ship moves are used for transporting the ordered items directly from your supplier's facility to your customer's facility.

See 'Logistics Flows, page 2-6 for more information.

### **Defining Plan Scope**

Use the following procedure to define your plan scope.

#### **To define plan scope:**

1. From the Transportation Planner Navigator, select Edit Plan Options from the Plan Options menu. Then select the Plan name from the list of values.

You can also access the Plan Options window in the following ways:

- In the Transportation Plan Names window, select the plan and then click Plan Options.
- On the Planner Workbench, select the plan on the navigation tree and then right-click and select Plan Options.
- On the Planner Workbench, select the plan on the navigation tree and then select Plan Options from the Plan toolbar menu.

### Plan Options Window: Scope Tab

Plan Options

Plan Name: **HBPL-9-DS1** Description: **Drop ship only**

Scope Optimization Costs Constraints Auto-Release

Plan Start Date/Time: **03-OCT-2006 00:00 PST**  
 Plan End Date/Time: **04-OCT-2006 23:59 PST**

Plan transportation for:

☐ Outside Processing  
☒ Drop Shipments

Facilities to be planned:

Facility	Description	Internal Inbound <input checked="" type="checkbox"/> Select All	Internal Outbound <input type="checkbox"/> Select All	External Inbound <input type="checkbox"/> Select All	External Outbound <input type="checkbox"/> Select All
SDR_SD_Re	SDR_SD_Redmond	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Add All Facilities

The system populates the Plan Name and Description fields on the Scope tab with the name and description you entered for the plan in the Transportation Plan Names window. You can update the Plan Name and Description fields in the Plan Options window.

2. Select the Plan Start Date. The system defaults the Plan Start Date and Plan End Date based on the selected Plan Start Date Offset and the Plan Days specified on the Default Plan Options template. Refer to 'Plan Time Horizon Selection Considerations, page 6-5 for additional information on selecting plan start and end dates.

**Note:** The Plan Start and Plan End Dates must be later than or equal to the current system date. Based on this definition, a delivery line that is past due on the basis of its latest ship date is not captured as input to the planning engine.

The system populates the Plan Start and Plan End times based on the business Day Start Time specified on the Global Preferences setup window. See 'Step 24: Set Up Global Preferences, page 5-11 for more information.

You can update the Plan Start time value on the Plan Options window. The Plan End time defaults as 23 hours and 59 minutes past the plan start time. If you change the Day Start Time for a plan that has already run, you must re-run the plan for the new times to take effect.

If the Day Start Time is 00:00, then the Plan End Date can be equal to the Plan Start Date. For example, if Day Start Time is 00:00, Plan Start Date is 10-Sep-03, and Plan End Date is 10-Sep-03, this means that the planning horizon is from 10-Sep-03, 00:00 to 10-Sep-03, 23:59. If the Day Start Time is any other time other than 00:00, the Plan End Date must be later than the Plan Start Date.

3. The server time zone code appears next to the Plan Start and End Times on the Plan Options window. The time zone code display on the Scope tab lets you know the appropriate plan start time. For example, if the server time zone was Eastern Standard Time, but you operate in the Pacific time zone and you set the plan start time to 10:00 am, it means 7:00 am Pacific Standard Time.
4. Select the transportation network scope by selecting the facilities to include in the transportation plan. Note that the facilities that you select on the Default Plan Options template remain selected on the Plan Options window when you define your current plan. You can change these selections.

**Note:** These are the host company facilities linked to the location of one or more shipper organizations only, not those connected only to customer, supplier, or carrier sites.

Facility effectivity dates do not apply to the Facilities List of Values on the Plan Options Scope tab. The Facilities list of values lists all the facilities belonging to the shipper regardless of their effectivity dates.

1. Select the facilities from the list of values in the Facility field.
2. To add more facilities, repeat the process on each row. Each time you populate a row, a new row is enabled.
3. To delete a row, select the row and then select Delete Record from the Edit menu.
4. To automatically populate the Facility fields with all the host company facilities, click Add All Facilities.
5. Select the logistics flows that you want to consider in planning. See 'Logistics Flows for which to Plan, page 6-9 for additional information.
  1. To plan for outside processing moves, select the Outside Processing check box.

2. To plan for shipments that are delivered directly from suppliers to customers, select the Drop Shipments check box.
3. For each selected facility in the transportation plan, specify the logistics flows to plan for. You can choose to plan for any or all of the following moves involving a selected facility using the check boxes corresponding to each move:

- Internal Inbound
- Internal Outbound
- External Inbound
- External Outbound

For example, if, for a selected facility F1, you select all four flows, the planning engine plans for the following movements:

- Inbound to facility F1 from other host company facilities
- Outbound from facility F1 to other host company facilities
- Inbound from suppliers (external inbound) to facility F1
- Outbound to customers (external outbound) from facility F1

If, for a selected facility F2, you do not select the external inbound flow, the planning engine does not plan for shipments from suppliers inbound to facility F2.

Also, if you select internal outbound from F1 but not internal inbound to F2, the planning engine still captures shipments from F1 to F2.

To plan a particular logistics flow for all the selected facilities, select the Select All check box in the column corresponding to the flow. This lets you select all check boxes in that column representing the move rather than having to select each check box corresponding to each facility. Deselecting the Select All check box deselects all check boxes in that column.

6. Click the Save icon to save your plan scope.

## Specifying Plan Optimization Strategies

You can specify various optimization strategies for shipment consolidation. For example, the strategy may be a simple level of consolidation, which means that all shipments originating from the same place and going to the same destination with the same latest delivery date can be consolidated into one direct shipment. A strategy with a higher level of consolidation may build multi-stop truckloads with continuous moves. Higher levels of consolidation require longer transportation plan run time, but provides

lower cost solutions.

For detailed information on load consolidation strategies, see 'Load Consolidation Strategies, page 2-10.

### **Defining Plan Optimization Strategies**

Use the following procedure to define your optimization strategies.

#### **To specify plan optimization strategies:**

1. From the Transportation Planner Navigator, select Edit Plan Options from the Plan Options menu. Then select the Plan name from the list of values.
2. Select the Optimization tab.



### Plan Options Window: Optimization Tab

Plan Name: **HBPL9-DS1** Description: **Drop ship only**

Scope: Optimization Costs Constraints Auto-Release

☐ Palletized Planning

**Optimization Strategies**

- ☐ Mode/Carrier Selection Only
- ☐ Simple Consolidation and Mode/Carrier Selection
- ☒ Advanced Consolidation and Mode/Carrier Selection
  - ☒ Pooling
  - ☐ Multi-Stop Truckloads
  - ☐ Continuous Moves

**Optimization Parameters**

Parameter	Value	Unit of Measurement
Target Truckload Utilization	90	Percentage
Minimum Truckload Utilization	10	Percentage
Local Pooling Shipment Size Limit	10	Percentage
Local Pooling Radius	10	Percentage
Stop Neighborhood Radius		Mile
General Pooling Radius	40	Percentage
Maximum Deadhead Distance		Mile

3. To specify palletized planning or non-palletized planning, select or deselect the Palletized Planning check box.

For more information on palletized planning, see 'Planning Palletized Freight, page 7-1.

**Note:** Any change made to the palletized planning flag after the setup data snapshot from the execution system is not considered by the order update and re-optimization processes. See 'Data Snapshot, page 8-1 and 'Updating Orders and Re-Optimizing Plans, page 15-1 for more information.

4. Select your optimization strategies.

When you first view the Optimization tab for a new plan, the optimization strategies that you selected in the default plan options template remain selected. See 'Defining User-Specific Default Plan Options, page 6-47 for more information. You can choose other strategies if desired.

### 1. Mode/Carrier Selection Only

To select the best mode and carrier for each delivery line without consolidating these shipments at all, select Mode/Carrier Selection only.

**Note:** Even if you select the Mode/Carrier Selection only option, a shipment that is larger than one truckload is split up into multiple trips.

### 2. Simple Consolidation and Mode/Carrier Selection

To consolidate shipments traveling from the same origin to the same destination in the same time frame and to find the best mode and carrier for each consolidated trip, select the Simple Consolidation and Mode/Carrier Selection option.

While this strategy gains economies with the least amount of effort and disruption, it yields limited savings as compared to advanced strategies.

### 3. Advanced Consolidation and Mode/Carrier Selection

To use advanced load consolidation strategies, such as pooling, multi-stop truckloads, and continuous moves, select the option Advanced Consolidation and Mode/Carrier Selection. For more information on advanced consolidation strategies, see 'Load Consolidation Strategies, page 2-10 .

You must select at least one check box; Pooling, Multi-Stop Truckloads, or Continuous Moves under Advanced Consolidation and Mode/Carrier Selection when you choose this option.

**Note:** If you have not licensed Oracle Transportation Optimization, only two options are available: Multi-Stop Truckloads and Continuous Moves. The Pooling option is not available.

Use the profile option MST: Licensed to Use Oracle Transportation Optimization to indicate whether or not you have licensed Oracle Transportation Optimization. By default, no value is specified for this profile option, which is equivalent to the value No.

DO NOT enable this profile if the Transportation Optimization option is not licensed.

### 5. Enter your optimization parameters.

The planning engine uses algorithms for load consolidation and mode and carrier selection that require various parameter settings. You may want to manipulate

parameters governing the trade-off between solution quality and run time. The parameters that the planner can specify are as follows.

**Note:** Optimization Parameters are enabled or disabled based on the optimization strategy you select. See 'Relationship between Optimization Strategies and Optimization Parameters for more information, page 6-19.

1. **Target Truckload Utilization (%):** This parameter is the threshold above which the planning engine considers that trucks are full enough. For example, if you specify this parameter to be 90%, then any truck pending a capacity utilization of greater than 90% during the optimization process is considered sufficiently full and, in later stages of optimization, the planning engine does not try to add more shipments to the truck. Higher values of this parameter result in longer system run times but lower cost solutions.
2. **Minimum Truckload Utilization (%):** The planning engine generates different truckload trips with various levels of capacity utilization. Only those truckloads that have capacity utilization greater than the minimum truckload utilization specified here are considered for inclusion in the solution. Increasing the value of this parameter can improve the speed of planning since the planning engine considers fewer truckload trips in determining the final solution, but this may result in higher cost solutions.
3. **Maximum Deadhead Distance (miles):** The planning engine may build continuous moves with empty legs between loaded trips. This parameter specifies the maximum distance that a truck can be allowed to travel unloaded between loaded trips in a continuous move. Higher values of this parameter result in longer system run times but lower cost solutions.
4. **Local Pooling Shipment Size Limit (%):** This parameter specifies the allowed size of the shipment for local pooling. For example, if this parameter is set to 10%, then the engine considers local pooling only for shipments less than 10% of a truckload. Higher values of this parameter result in longer system run times but lower cost solutions.
5. **Local Pooling Radius (%):** The planning engine considers local pooling only at those points where the distance from pool point to the destination (or origin to pool point) is less than the specified threshold percent of the origin to destination distance. For example, if the distance between an origin and a destination is 100 miles and this parameter is specified as 10%, then the planning engine considers only the pool points within 10 miles of the origin or destination for local pooling. Higher values of this parameter result in longer system run times but lower cost solutions.

6. Stop Neighborhood Radius (miles): For multi-stop trip generation, the planning engine only allows subsequent origins and destinations within this specified distance of each other. Higher values of this parameter result in longer system run times but lower cost solutions.
  7. General Pooling Radius (%): For general pooling, the planning engine considers only the pool points that are within the specified distance from the origin or destination, where the distance is specified as a percentage of the total distance from the origin to the destination. Higher values of this parameter result in longer system run times but lower cost solutions.
6. After specifying your parameter values, click the Save icon on the toolbar to record your plan optimization strategies.

When you first view the Optimization tab for a new plan, the system populates the optimization parameter fields with the default values specified in the default plan options template. See 'Defining User-Specific Default Plan Options, page 6-47 for more information. You can update these values.

The parameters that are not relevant for selected strategies remain disabled on the Plan Options window. For example, if, in the Default Plan Options template, you selected the Simple Consolidation and Mode/Carrier Selection strategy and specified the target truckload utilization value to be 90%, you see this value when you first access the Optimization tab to create a new plan. If you now select the Mode/Carrier Selection Only strategy in the newly created plan, the Target Utilization field becomes blank and is non-editable.

The strategies that you select on the Default Plan Options template remain selected when you first view the Optimization tab on the Plan Options window of the new plan. If you had selected either Mode/Carrier Selection Only or Simple Consolidation and Mode/Carrier Selection on the default template and now change the selection to Advanced Consolidation and Mode/Carrier Selection, the seeded parameter values corresponding to this strategy automatically populate the fields.

Parameters specific to Advanced Consolidation and Mode/Carrier Selection remain disabled in the default plan options template when you do not choose this strategy in defining the default plan options. As a result, when you select the Advanced Consolidation strategy on the Plan Options window for your new plan, the system populates the parameter fields specific to this strategy with values seeded in the system. You can modify these values as required.

The system populates the Units of Measure for the parameters based on the units of measure you specify on the User Preferences window. You cannot change the Units of Measure values on the Optimization tab. If you change the Units of Measure specified as your user preference, then for existing plans, you must change the parameter values to correspond to the new units of measure. This is because, on re-running the plan, the snapshot process interprets the values based on the units of measure specified on the User Preferences window.

### Relationship between Optimization Strategies and Optimization Parameters

The optimization strategy you select in the top half of the Plan Options window determines the optimization parameters that are enabled in the lower half of the Plan Options window. The following table summarizes the user interface behavior based on optimization strategies you select.

Optimization Strategy Selected	Parameters Enabled
Mode/Carrier Selection Only	None
Simple Consolidation and Mode/Carrier Selection	Target Truckload Utilization
Advanced Consolidation and Mode/Carrier Selection: Pooling	<ul style="list-style-type: none"><li>• Target Truckload Utilization</li><li>• Minimum Truckload Utilization</li><li>• Local Pooling Shipment Size Limit</li><li>• Local Pooling Radius</li><li>• General Pooling Radius</li></ul>
Advanced Consolidation and Mode/Carrier Selection: Multi-Stop truckloads	<ul style="list-style-type: none"><li>• Target Truckload Utilization</li><li>• Stop Neighborhood Radius</li><li>• Minimum Truckload Utilization</li></ul>
Advanced Consolidation and Mode/Carrier Selection: Continuous Moves	<ul style="list-style-type: none"><li>• Target Truckload Utilization</li><li>• Maximum Deadhead Distance</li></ul>

Optimization Strategy Selected	Parameters Enabled
Advanced Consolidation and Mode/Carrier Selection: Pooling and Multi-Stop Truckloads	<ul style="list-style-type: none"> <li>• Target Truckload Utilization</li> <li>• Minimum Truckload Utilization</li> <li>• Local Pooling Shipment Size Limit</li> <li>• Local Pooling Radius</li> <li>• General Pooling Radius</li> <li>• Stop Neighborhood Radius</li> </ul>
Advanced Consolidation and Mode/Carrier Selection: Pooling and Continuous Move	<ul style="list-style-type: none"> <li>• Target Truckload Utilization</li> <li>• Minimum Truckload Utilization</li> <li>• Local Pooling Shipment Size Limit</li> <li>• Local Pooling Radius</li> <li>• General Pooling Radius</li> <li>• Maximum Deadhead Distance</li> </ul>
Advanced Consolidation and Mode/Carrier Selection: Multi-Stop truckloads and Continuous Move	<ul style="list-style-type: none"> <li>• Target Truckload Utilization</li> <li>• Stop Neighborhood Radius</li> <li>• Minimum Truckload Utilization</li> <li>• Maximum Deadhead Distance</li> </ul>

Optimization Strategy Selected	Parameters Enabled
Advanced Consolidation and Mode/Carrier Selection: Pooling, Multi-Stop truckloads, and Continuous Move	<ul style="list-style-type: none"> <li>• Target Truckload Utilization</li> <li>• Minimum Truckload Utilization</li> <li>• Local Pooling Shipment Size Limit</li> <li>• Local Pooling Radius</li> <li>• General Pooling Radius</li> <li>• Stop Neighborhood Radius</li> <li>• Maximum Deadhead Distance</li> </ul>

### Parameter Value Validations

The following table presents the valid and default values for the different optimization parameters you specify on the Optimization tab in the Plan Options window.

Optimization Parameter	Valid Value X	Default Value
Target Truckload Utilization	$0 < X < 100$	90 (Percentage)
Minimum Truckload Utilization	$0 < X < 100$	50 (Percentage)
Maximum Deadhead Distance	$X > 0$	300 (Distance Unit of Measure, Example: Miles)
Local Pooling Shipment Size Limit	$0 < X \leq 100$	10 (Percentage)
Local Pooling Radius	$0 < X < 100$	10 (Percentage)
Stop Neighborhood Radius	$X > 0$	300 (Distance Unit of Measure, Example: Miles)
General Pooling Radius	$0 < X < 100$	20 (Percentage)

If you enter a value for a parameter that is not within the specified range, the

system issues an error message.

## Specifying Costs to Consider in Optimization

Each transportation mode has core cost elements. For example, the Truckload mode has cost per distance unit, minimum charge, and stop charges. Less-than-truckload and Parcel modes have core cost elements, such as cost per unit weight and minimum charges. The system automatically uses the core cost elements in the transportation cost function and you do not have the choice to switch these off.

Not all costs for all modes of transport may be of interest to you. You may want to leave types of non-core charges, such as discounts, surcharges, and other accessorial charges, out of your analysis. For example, accessorial charges, such as loading, assisted loading, and surcharges for truckload shipping, may not be of interest to you for cost optimization. You have the option to choose specific cost elements for the optimization engine to consider in computing the transportation cost.

By default, the planning engine considers all the costs in the optimization process, unless you specifically eliminate the costs that need not be included in the planning process. If you have made your selections of costs to consider in optimization in the default plan options template, these costs remain selected in the Plan Options window. See 'Defining User-Specific Default Plan Options, page 6-47 for more information. You can change these selections as desired.

### To specify costs to be considered in plan optimization:

1. From the Transportation Planner Navigator, select Edit Plan Options from the Plan Options menu. Then select the Plan name from the list of values.
2. Select the Costs tab.



### Plan Options Window: Costs Tab

Plan Options

Plan Name: **TP\_Nov11** Description: **Nov 11, Regular plan**

Scope Optimization **Costs** Constraints Auto-Release

Include the following costs for optimization:

**Truckload (TL) Costs**

- ☒ Loading and unloading charges
- ☒ Layover charges
- ☒ Origin and destination surcharges
- ☐ Other accessorial charges

**Less Than Truckload (LTL) Costs**

- ☒ Discounts
- ☐ Other accessorial charges

**Parcel Costs**

- ☒ Discounts
- ☐ Other accessorial charges

3. Select the costs to consider in optimization. The various costs you can include for optimization are:
  1. Truckload Costs
    - Loading and unloading charges: loading charges, assisted loading charges, unloading charges, assisted unloading charges
      - Layover charges: weekday layover charges, weekend layover charges
      - Origin and destination surcharges
      - Other accessorial charges
    - Less than Truckload (LTL) Costs
      - Discounts

- Other accessorial charges
- **Parcel Costs**
  - Discounts
  - Other accessorial charges

4. Click the Save icon on the toolbar to save your plan cost specifications.

## Specifying Constraints and Penalties

This section discusses the constraints and associated penalties that the Oracle Transportation Planning engine considers. It also discusses the procedure involved in selecting these constraints and associating penalties with relevant constraints.

### Constraints

Oracle Transportation Planning enables you to specify constraints for consideration in planning shipments.

Constraints in Oracle Transportation Planning can have one of the following statuses:

- **Ignore:** The planning engine does not consider the ignored constraints. The constraints in the Select Constraint box in the Constraints tab on the Plan Options window are considered as ignored.  
  
For example, if you ignore the facility dock capacity constraint, then the planning engine schedules trips without considering the dock capacity of any facility. The planning engine may schedule more trips than the number of docks available at the facility.
- **Hard constraints:** The planning engine always respects hard constraints and satisfies these constraints unless it is impossible to do so. The planning engine considers relaxing the constraints only if it cannot find a solution that respects them. The constraints in the Hard Constraints Selected box in the Constraints tab on the Plan Options window are treated as hard constraints.
- **Soft constraints or penalized constraints:** The planning engine converts soft constraints to elements of a cost function. Each constraint violation is associated with a cost and the planning engine generates the cost optimal solution. Therefore, the planning engine violates a constraint only if the savings from doing so exceed the resultant penalty. If you do not want to violate a constraint, then you can set a very high penalty for violating that constraint.

Penalty values are not real costs, only a means to model the value of constraints. They are not included in cost calculations shown in the plan output windows or in

reports.

### **Constraints that can be either Ignored or Hard**

You can specify the following constraints such that the planning engine either ignores them or considers them as hard constraints. You cannot specify these constraints as soft constraints.

1. Carrier CM rules - maximum total distance
2. Carrier CM rules - maximum total time
3. Carrier trip rules - interspersed pick-ups and drop-offs
4. Carrier trip rules - maximum total distance in 24 hours
5. Carrier trip rules - maximum driving time in 24 hours
6. Carrier trip rules - maximum on-duty time in 24 hours
7. Carrier trip rules - minimum layover time
8. Carrier service dimensional constraints (minimum length, width, and height dimensions; maximum length, width, and height dimensions)
9. Customer - customer compatibility
10. Customer - facility compatibility
11. Early delivery
12. Early ship
13. Facility - mode compatibility
14. Facility - pool carrier compatibility
15. Facility - vehicle compatibility
16. Host company facility - facility compatibility
17. Item - carrier compatibility
18. Item - facility compatibility
19. Item - mode compatibility
20. Item - vehicle compatibility

21. Late ship
22. Ship set constraints
23. Supplier - facility compatibility

#### **Constraints that can be Ignored, Hard, or Soft**

You can specify the following constraints such that the planning engine ignores them or considers them as hard constraints or soft constraints. For each constraint you specify as a soft constraint, you must specify a penalty value.

1. Carrier commitments - trip based
2. Carrier commitments - spend based
3. Carrier commitments - weight based
4. Carrier trip rules - maximum total distance
5. Carrier trip rules - maximum total time
6. Carrier trip rules - number of stops
7. Carrier standing appointments
8. Effective vehicle capacity
9. Facility - carrier compatibility
10. Facility dock availability
11. Facility handling capacity
12. Facility receiving calendar
13. Facility shipping calendar
14. Vehicle availability on a lane
15. Late delivery

#### **Penalties**

In determining whether to violate soft constraints, the planning engine evaluates the penalty against the impact on costs. A penalty represents an estimated or assumed money cost associated with the violation of a constraint. The planning engine minimizes the sum of actual and penalty costs.

For example, consider a shipment that must be delivered within 3 days. The only means

to deliver this shipment on time is by sending it by parcel carrier at a cost of \$500. If, however, the shipment can be late by 1 day, then the planner can send it by truckload carrier at a cost of \$300. Assume that the planner assigns a penalty of \$100 for being late by a day. When this data is input to the planning engine, the engine tries to minimize the sum of the actual transportation cost and the late penalty and evaluates the two options:

- Option 1: Send the shipment on time.

Total cost = \$500

- Option 2: Send the shipment late.

Total cost = actual cost + penalty cost = \$300 + \$100 = \$400.

Since it is cost-optimal to send the shipment late by 1 day, the planning engine schedules the shipment to be sent late. If, however, the planner considers on-time delivery as more important and assigns a higher penalty cost of \$300 for being late by a day, the engine schedules the shipment to be delivered on time since it is then cost-optimal to do so.

Note that, in the penalty-based approach, the planning engine converts constraints to elements of a cost function and the planning engine selects the optimal cost solution.

### **Constraints for Which to Define Penalties**

You can define penalties for constraints that are categorized as soft constraints. The constraints that you can define as soft constraints include the constraints listed under 'Constraints that can be Ignored, Hard, or Soft, page 6-26.

### **Penalty Functions**

You can define penalty cost functions for different types of constraints as a percentage of order value or as absolute values. The following example uses the penalty function for effective vehicle capacity exceeded, but this applies to all other constraints also.

You can define the penalty functions as follows:

- Linear function of \$X per unit of time or capacity: For example, the penalty can be \$100 for every 1% of effective vehicle capacity exceeded. If the effective vehicle capacity is 45000 lbs and if the shipment exceeds this weight by 1000 lbs, then the penalty for exceeding vehicle capacity is calculated as follows:

Percentage of effective vehicle weight capacity exceeded =  $1000 * 100 / 45000 = 2.2\%$

Penalty value =  $2.2 * \$100 = \$220$

- Step function: You can specify the start and end of the multiple intervals and the penalty value for each interval. The last interval does not have an upper bound or the planning engine considers the upper bound to be infinity. For example, consider the effective vehicle capacity constraint penalty defined as follows:
  - 0-4 % of effective vehicle capacity exceeded: penalty value of \$100

- 4-8 % of effective vehicle capacity exceeded: penalty value of \$200
- 8-12% of effective vehicle capacity exceeded: penalty value of \$400
- 12% and above of vehicle capacity exceeded: penalty value of \$700

If an order of value \$10000 exceeds effective vehicle capacity by 10%, then the penalty value is \$400.

- Variable linear function: You can specify the start and end of the multiple intervals and the penalty rate for each interval. The last interval does not have an upper bound. The upper bound is considered infinity. For example, consider the effective vehicle capacity constraint penalty defined as follows:

- 0-4 % of effective vehicle capacity exceeded: penalty rate of \$50 per excess percentage
- 4-8 % of effective vehicle capacity exceeded: penalty rate of \$75 per excess percentage
- 8-12% of effective vehicle capacity exceeded: penalty rate of \$100 per excess percentage
- 12% and above of vehicle capacity exceeded: penalty rate of \$150 per excess percentage

If a shipment exceeds effective vehicle capacity by 10%, then the effective vehicle capacity penalty is:

$$(\$50 * 4) + (\$75 * 4) + (\$100 * 2) = \$700.$$

- Fixed value: You can specify a fixed penalty for violation of a constraint. For example, penalty cost for exceeding effective vehicle capacity = \$500.

### Penalty Units of Violation and Value

You can define penalties as linear functions, step functions, or variable linear functions.

- You define linear and variable linear penalties as a penalty rate, such as, penalty per hour, penalty per stop, and penalty per distance unit.
- You define step penalties and fixed penalties as a function of the units of violation, such as, penalty as a function of hours, penalty as a function of stops, and penalty as a function of trips.

The penalty units of violation and value for each of the constraints are discussed in the following table.

<b>Serial No.</b>	<b>Penalty for Constraint Violation</b>	<b>Units of Violation</b>	<b>Penalty UOM (Linear and Variable Linear Penalty)</b>	<b>Penalty UOM (Step and Fixed Penalty)</b>
1	Carrier commitments - Trip based	Trip	Currency units per trip	Currency units
2	Carrier commitments - Spend based	Unit of revenue	Currency units per unit of revenue (\$)	Currency units
3	Carrier commitments - Weight based	Unit of Weight	Currency units per unit of weight (lbs)	Currency units
4	Carrier trip rules - maximum total distance	Unit of Distance	Currency units per unit of distance	Currency units
5	Carrier trip rules - maximum total time	Unit of Time	Currency units per unit of time	Currency units
6	Carrier trip rules - number of stops	Stops	Currency units per stop	Currency units
7	Carrier standing appointments	Unit of Time	Currency units per unit of time	Currency units
8	Carrier vehicle availability	Trips	Currency units per trip	Currency units

Serial No.	Penalty for Constraint Violation	Units of Violation	Penalty UOM (Linear and Variable Linear Penalty)	Penalty UOM (Step and Fixed Penalty)
9	Effective vehicle capacity	Percentage of capacity (weight, volume, or pallets)	<p>Currency units per percent of capacity (flat amount)</p> <p>For example, consider a truck that has a capacity of 3000 lbs. The penalty is \$50 for exceeding capacity (weight or volume) by 1%. If the truck was loaded to 3090 lbs, then the percentage excess is 3%.</p> <p>Excess penalty cost = <math>\\$50 * 3 = \\$150</math></p>	Currency units
10	Facility - Carrier compatibility	Per violation	Currency units per violation	Currency units
11	Facility dock availability	Docks	Currency units per dock	Currency units
12	Facility handling capacity	Percentage of capacity (weight, volume, pieces, or pallets)	Currency units per percent of capacity (flat amount)	Currency units
13	Facility Receiving calendars	Unit of Time	Currency units per unit of time	Currency units
14	Facility Shipping Calendars	Unit of Time	Currency units per unit of time	Currency units

- In considering facility calendars, the planning engine behaves as illustrated in the following example. If a facility has hours of operation from 8:00 am to 5:00 pm, and a shipment is scheduled at 11:00 p.m., the planning engine has two options:
  1. Consider that the order is 6 hours late and assess facility hours constraint violation penalty for the 6 hours.



2. Consider that the order is early by 9 hours and assess facility hours constraint violation for the 9 hours.

In such a case, the planning engine assesses the lower of the two penalties.

- In considering vehicle capacity constraints, the planning engine behaves as follows. The units of violation for exceeding vehicle capacity can be weight, volume, or pallets. Consider a vehicle with an effective volume capacity of 4000 cubic feet, weight capacity of 10,000 lbs, and pallet capacity of 40 pallets. Suppose that the penalty is linear and is specified as \$100 for a 5% excess, \$200 for 10% excess, and so on.

If the system builds a load that exceeds both volume and weight capacity measures, the planning engine considers the violation with the maximum penalty. For example, if the planning engine builds a load with the vehicle type that has a volume of 4200 cubic feet and weight of 11,000 lbs, then the volume capacity is exceeded by 5% and the weight capacity by 10%. In this case, the planning engine applies the penalty for the weight capacity, which is \$200.

The vehicle has an absolute volume capacity that can never be exceeded. You do not specify absolute weight capacity and pallet capacity for a vehicle; you specify only *effective* weight and pallet capacity.

### **Defining Constraints and Penalties**

Use the following procedure to specify constraints and penalties for your plan.

#### **To specify Constraints and Penalties:**

1. From the Transportation Planner Navigator, select Edit Plan Options from the Plan Options menu. Then select the Plan name from the list of values.
2. Select the Constraints tab.

### Plan Options Window: Constraints Tab

Plan Options

Plan Name: **TP\_Nov11** Description: **Nov 11, Regular plan**

Scope Optimization Costs **Constraints** Auto-Release

Carrier Commitment Set: **Seattle Manufact** Description: **Carrier Routing Rules**

Select Constraints

- Carrier service dimensional constraints
- Carrier standing appointments
- Customer - customer compatibility
- Customer - facility compatibility
- Drop trailer constraints
- Facility - carrier compatibility
- Facility - mode compatibility
- Facility - pool carrier compatibility
- Facility - vehicle compatibility
- Facility dock availability
- Facility handling capacity
- Facility shipping calendar / hours of operation
- Host company facility - facility compatibility
- Item - carrier compatibility
- Item - facility compatibility
- Item - vehicle compatibility
- Ship set and arrival set constraints
- Supplier - facility compatibility

Hard Constraints Selected

- Early delivery
- Early pick-up
- Item - mode compatibility
- Late pick-up

Soft Constraints Selected

Constraint	Penalty Type
Effective vehicle capacity	Variable...
<b>Vehicle availability on a lane</b>	<b>Linear</b>
Facility receiving calendar / hour...	Fixed
Late delivery	Step

Soft Constraint Penalty Values:

From (>)	To (<=)	Range UOM	Penalty Value	Penalty UOM
0		Loads	0	Dollars per load

3. Select the Carrier Commitment Set from the list of values. The Carrier Commitment Set defaults from the value you specify in the default plan options template. See 'Defining User-Specific Default Plan Options, page 6-47 for more information. You can change this default value by selecting a carrier commitment set from the list of values. The list of values contains all active carrier commitment sets existing in Oracle Transportation Execution.

For more information on Carrier Commitment sets, refer to 'Step 17: Set Up Carrier Commitments, page 4-34.

4. Select the constraints to consider in planning. The Select Constraints box lists all the constraints that you have not yet included for consideration in the plan. See the discussions on 'Constraints, page 6-24 and 'Penalties, page 6-26 for details.
5. Select the constraints to consider in the Select Constraints box and move them to the Hard Constraints Selected or Soft Constraints Selected boxes using the arrows.

In the Select Constraints box, if you select a constraint that can be only Hard or Ignored, the arrow for moving the constraint to the Soft Constraints Selected box

remains disabled.

The system adds the constraints that you select and move to the Hard or Soft Constraints Selected box in the alphabetical order of the constraints already in the box.

6. Specify the penalty to assign to each soft constraint. You can define penalties as linear, fixed, step, or variable functions. See 'Penalty Functions, page 6-27 for more information.

When you select a constraint to be a soft constraint, the penalty value defaults from the default plan options template. See 'Defining User-Specific Default Plan Options, page 6-47 for more information. You can change this value by selecting a penalty type from the list of values. When you select a penalty type, a child window (Soft Constraint Penalty Values) appears at the bottom of the Plan Options window where you can specify your penalty values.

If you had not selected a particular constraint in the default plan options template, the penalty function for that constraint defaults to Linear in the Soft Constraints Selected box. You can change this value using the list of values. The child window fields in such cases appear blank. You must enter a valid positive value for the penalty.

To define penalty values, see 'Defining Penalty Values, page 6-33.

7. After you have specified the penalty values for each of your soft constraints, click the Save icon on the toolbar to save your plan constraints.

#### **Defining Penalty Values**

In defining penalty values, note the following:

1. A penalty value includes a range of applicability with lower (From) and upper (To) limit values.  
  
You can update only upper limit (To) values of the range except for the upper limit of the last row. The upper limit of the last range is infinity and the system displays this as a blank.  
  
By default, a single range exists with lower limit zero, upper limit infinity, and penalty value zero.
2. Range and penalty values can be fractional values. You cannot specify negative values for range and penalty. Also, each range upper limit must be greater than the upper range limit of the previous row. When you add a row, the system automatically populates the upper range limit of the new row with a value equal to that of the previous row.
3. The system populates the units of measure for the range based on the units of measure you specify in your user preferences. You cannot update these units of measure on the Plan Options window. For example, late delivery range is

specified in terms of the time unit of measure you selected in the User Preferences window.

4. For a linear or fixed penalty, you can enter only the penalty value. Only a single range exists with lower and upper values of the range being zero and infinity respectively. You cannot change the range limit values. Also, you cannot add another row if the penalty type is linear or fixed. The menu option to add a row remains disabled.
5. For a step or variable linear penalty function, you can specify multiple rows of penalty values for different ranges.

You can add a row after any row, except the last row, by selecting that row and then selecting New from the File menu. When you add a new row, enter a value in the Penalty Value field of the new row.

In the following figure, the third row has been newly added. The Penalty Value field of the new row and the To field (upper range limit) of the previous row is blank and editable.

#### ***Adding a New Row in Soft Constraint Penalty Values Child Window***

**Soft Constraint Penalty Values:**

From (>)	To (<=)	Range UOM	Penalty Value	Penalty UOM
10	20	Trips	150	Dollars
20		Trips	200	Dollars
		Trips		Dollars

This enables you to edit the upper range limit of the previous row. You can also edit the penalty value of the new row. Editing the upper range limit of the previous row results in the automatic update of the lower range limit of the new row to the same value as the upper range limit of the previous row.

### Editing Range Limits in Soft Constraint Penalty Values Child Window

Soft Constraint Penalty Values:

From (>)	To (<=)	Range UOM	Penalty Value	Penalty UOM
10	20	Trips	150	Dollars
20	30	Trips	200	Dollars
30		Trips	250	Dollars

Similarly, editing the upper range limit of the new row automatically updates the lower range limit of the following row to the same value as the upper range limit of the new row.

You can delete a row, except the last row, by selecting the row and then selecting Delete from the Edit menu. If you delete a row, the system automatically updates the rows such that the lower limit of the subsequent row is equal to the lower limit of the row deleted. The upper limit and the penalty value of the subsequent row remain the same.

If you select a value for the upper range limit, which is less than the upper range limit of the previous row and try to save these changes, the system generates an error message.

## Defining Auto-Release Rules for Planned Trips

Oracle Transportation Planning supports definition of auto-release rules and rule sets that you can use to automatically release trips after a plan has run successfully. After the plan has run successfully, the system immediately and automatically releases the trips that match these rules for execution. This manner of automatic release requires no manual intervention. Auto-releasing a trip also releases all of its related trips.

Two trips are related if they have at least one delivery in common. When you release a trip, the deliveries that are on the trip are also released. To release a delivery without all of its corresponding trips makes the release process incomplete. Therefore, Oracle Transportation Planning releases all of the trips that make up the delivery's itinerary. Related trips are not selected for release, but the system releases them because they are part of the itinerary of a delivery on a trip you selected for release.

An auto-release rule set may contain multiple rules. Each rule within a rule set can be composed of one or more conditions. An auto release rule condition applies a trip parameter, such as carrier, supplier, customer, vehicle utilization, time to departure, circuitry, or mode. For this parameter, you can apply an operator, such as equals, is not, is less than, is at most, is at least, is greater than, or is between. You can then specify a value for that parameter. For example, you can specify auto-release rules such as "Release all truckloads that have utilization greater than 90% and are assigned to carrier ABC" or "Release all trips that have a time left less than 24 hours". Time left is the

planned departure date and time of the trip at origin minus the current date and time.

In addition, you can specify a firm status for the trips auto-released by a rule set. A trip can have a firm status of Not Firm, Routing Firm, or Routing and Contents Firm. The planning system applies the firm status to all the trips auto-released by the rule set and also to their related trips.

The system automatically releases trips and related trips that match the auto-release rule criteria if they either have no associated exceptions or have exceptions only in the Unrestricted status. The system does not auto-release trips and related trips with exceptions in the Manual status.

You can specify the auto-release set to use for a plan on the Plan Options window.

Note that an empty auto-release rule causes all trips in the plan to be released.

See 'Releasing Plan Output for Execution, page 16-1 for more information.

**To define auto-release rules:**

1. From the Transportation Planner Navigator, select Edit Plan Options from the Plan Options menu. Then select the Plan name from the list of values.
2. Select the Auto-Release tab.

**Plan Options Window: Auto-Release Tab**

The screenshot shows the 'Plan Options' window with the 'Auto-Release' tab selected. The 'Plan Name' is 'A-RP-MU-12' and the 'Description' is 'Copy of RP-MU-12'. The 'Auto-Release' tab is active, showing three radio button options: 'Do not auto-release' (which is selected), 'Auto-release entire plan', and 'Auto-release individual trips using auto-release rule set'. The third option has an adjacent text box and a 'Maintain Rule Set' button.

3. Select your auto-release rule preference. You have the following options to choose from:
  - Do not auto-release: Select this option if you do not want the planning system

to automatically release any trips in the plan.

- Auto-release entire plan: Select this option if you want the planning system to automatically release the entire plan. The system does not release any trips in the plan that have exceptions flagged as Manual. For more information, see 'Global Preferences Setup for Exceptions, page 5-15.
  - Auto-release individual trips using auto-release rule set: Select this option if you want the system to automatically release trips that correspond to the conditions you specify in the rules. The system does not release any trips in the plan that have exceptions flagged as Manual. For more information, see 'Global Preferences Setup for Exceptions, page 5-15.
4. If you have created a valid rule set, select the rule set by which to automatically release individual trips.
  5. Click the Maintain Rule Set button to create a new rule set or to create new rules or update existing rules within a rule set. The Maintain Auto-Release Rule Set window opens.

### Maintain Auto-Release Rule Set Window

**Maintain Auto-Release Rule Set**

Rule Set:

Auto-release trips as: ☒ Not firm ☐ Routing firm ☐ Routing and Contents firm

Name	Description
Mode	Mode Equal TL

**Rule Conditions**

Field Name	Condition	From	To
Mode	Equals	TL	
Carrier	Equals		

If you select an auto-release rule set on the Auto-Release tab and then choose the Maintain Rule Set button, the system populates the Maintain Auto-Release Rule Set window with the selected rule set name.

If you do not select an auto-release rule set on the Auto-Release tab, the Rule Set name field on the Maintain Auto-Release Rule Set window remains empty.

6. To create a new auto release rule set, specify a name for the new rule set in the Rule Set field and click the Save icon on the toolbar. This adds the new rule set to the rule set list of values. You can now select this new rule set from the list of values on the Auto-Release tab.
7. Select the appropriate radio button to release the trips as Not Firm, Routing Firm, or Routing and Contents Firm. For more information on firming, see 'Firming, page 9-1.
8. Enter or update Rules and Rule Conditions.

An auto-release rule set consists of multiple rules. Each rule within a rule set contains one or more rule conditions. For example, a Rule Set A may include the following rules:

- Rule 1: Mode = Truckload and Carrier = Carrier XYZ
  - Rule 2: Mode = Truckload and Customer = Company ABC



Auto-release parameters include the following:

- Carrier
- Supplier
- Customer
- Utilization
- Remaining Time: Immediacy of load departure or time between current time and scheduled departure
- Circuitry
- Mode

For any of these parameters, you can select one of the valid conditions and specify a range of values for that parameter.

Auto-Release Rule Conditions include the following:

- Equals
- Is not
- Is less than
- Is at most
- Is at least
- Is greater than
- Is between

**Note:** If you want to specify Utilization equal to 90%, then you must choose the condition Utilization equals 0.9. The same applies to Circuitry. The Remaining Time is always considered in terms of hours.

Some examples for specifying auto-release rules are:

- Release all truckloads that have utilization greater than 90% and are assigned to carrier XYZ.
- Release all trips that have customer orders for Company ABC.

- Release all trips that are carrying the purchase order number PO12345.
- Release all trips that have an immediacy of departure less than 24 hours

9. Save your work.

**Note:** The planning system automatically releases a trip if it meets all of the conditions of any rule. An OR logic exists between rules and an AND logic between conditions of the same rule.

#### Conflicts Between Auto-Release Rules

The planning engine handles conflicting auto-release rules defined for a plan in the following ways.

- For trips that do not have related trips, the planning engine behaves as follows if a conflict exists between defined auto-release rules. When rules are defined such that some conditions qualify for the release of a trip, while other conditions disqualify the release of the same trip, then the system does not auto-release the trip.

The following example illustrates this behavior.

Suppose that a plan consists of only one trip T1 carrying deliveries D1 and D2 for customers C1 and C2 respectively.

The following are the possible customer conditions you can define as rules and the corresponding planning engine behavior.

Rule	Planning Engine Behavior
Customer equal to C1	Releases T1
Customer equal to C2	Releases T1
Customer equal to C1, Customer equal to C2	Releases T1
Customer not equal to C1	Does not release T1
Customer not equal to C2	Does not release T1
Customer not equal to C1, Customer not equal to C2	Does not release T1
Customer equal to C1, Customer not equal to C2	Does not release T1

Rule	Planning Engine Behavior
Customer not equal to C1, Customer equal to C2	Does not release T1

- For trips with related trips, the planning engine behaves as follows if a conflict exists between defined auto-release rules. When rules are defined such that some conditions qualify for the release of a trip, while other conditions disqualify the release of the same trip, the planning engine does not release that trip. However, if a different trip that is related to this trip qualifies for release, then the planning system releases the first trip also.

The following example illustrates this behavior.

Consider a plan with trips T1 and T2. Trip T1 carries deliveries D1 and D2 for customers C1 and C2 respectively. Trip T2 is part of the itinerary of delivery D1, that is, delivery D1 travels both on trips T1 and T2. T1 and T2 are, therefore, related trips.

- If you define the condition Customer equal to C2 as an auto-release rule for this plan, then the planning engine releases both trips T1 and T2.
- If you define the condition Customer not equal to C2, the planning engine releases both trips T1 and T2. This is because trip T2 satisfies the specified condition and therefore qualifies for release. The planning system releases Trip T2. Since trip T1 is related to trip T2, the planning system also releases trip T1.

## Viewing Plan Options

To view the plan options for a specific plan, select View Plan Options from the Plan Options menu on the Transportation Planner Navigator and then select the plan. The Plan Options window opens showing the plan options specified for the plan. You cannot update any field value.

## Editing Plan Options

To edit the plan options for a specific plan, select Edit Plan Options from the Plan Options menu on the Transportation Planner Navigator and then select the plan. The Plan Options window opens showing the plan options specified for the plan. You can update any or all fields that were editable when you first specified the plan options. See 'Specifying Plan Options, page 6-4 for more information.

## Copying a Plan

You can copy an existing plan into a new plan. You can choose to copy the entire plan or the plan options only.

### To copy a plan:

1. Select the Copy Plan option from the Transportation Planning menu on the Navigator. This opens the Copy Plan window.

You can also access the Copy Plan window in the following ways:

- In the Transportation Plan Names window, select the plan that you want to copy from and then click Copy Plan.
- Select the plan on the Planner Workbench navigation tree and then right-click and select Copy Plan.
- Select the plan on the Planner Workbench navigation tree and then select Copy Plan from the Plan toolbar menu.

### Copy Plan Window

Source Plan Name

**New Plan**

Name

Description

☒ **Copy Plan Options Only**

☐ Use plan dates from default plan options template (06-JAN-2006 to 07-JAN-2006)

☐ Use plan dates from source plan (03-OCT-2006 to 04-OCT-2006)

☒ Enter new plan dates

Plan Start Date/Day Start

Plan End Date/Day End

2. Select the Source Plan Name. The list of values shows all the active plans.

If you access the Copy Plan window from the Transportation Plan Names window using the Copy Plan button, the system populates the Source Plan Name field with the plan name you selected on the Transportation Plan Names window. However, you can choose another source plan from the list of values.

3. Enter the Name and Description of the new plan into which you are copying the plan.
4. Select the Copy Plan Options Only check box to copy only the plan options. This enables the three choices in the Copy Plan Options Only region.
  - To copy the start and the end dates along with the rest of the plan options, select the Use plan dates from source plan radio button. The Copy Plan window displays the plan start and end dates of the source plan in parentheses.

If the source plan's dates are prior to the current system date, you cannot use the same dates. This option remains disabled in such cases.

  - Select Use plan dates from default plan options template if you want the dates from the default plan options template based on the System Date Offset and

Plan Days specified. See 'Defining User-Specific Default Plan Options, page 6-47 for more information. The Copy Plan window displays the default plan options template dates in parentheses. The system copies the other plan options from the source plan.

- Select the Enter new plan dates option to enter new dates for the new plan. The system populates the Plan Start and Plan End Date fields with dates from the default plan options template. You can edit these dates. The system also populates the business Day Start and End Times, but you cannot edit these values.

**Note:** When you copy a plan or plan options, the copied new plan has the user preferences with which the source plan was created.

5. Click OK to copy the plan.
6. To clear all the entered fields, click Clear.

## Purging a Plan

To run the purge process for a plan, select the plan name in the Transportation Plan Names window and click the Purge Plan button. This results in the system deleting the selected plan from the Transportation Planner workbench. You can purge only one plan at a time.

You can also purge a plan on the Planner Workbench by selecting the plan node on the navigation tree and then selecting the Purge Plan option from the Plan menu.

## Launching a Plan

The Launch Plan process captures all the data from the source systems and produces a plan output based on collected data. It is possible to perform the Launch Plan process without performing a re-capture of all the data if you have launched the plan previously. In this case, the planning engine captures only the transaction information, such as delivery lines and trips and uses the setup data, such as, carriers, rates, and facilities from the last snapshot.

**Note:** The MRP profile option `MRP: Environment variable to set path for MRP files` must be set to NULL in order to avoid any problem while launching a plan.

**Note:** You must run the Import Shipping Location program at least once before launching any plan. This process needs to be repeated if new locations are added later.

Use the following procedure to launch a plan.

Note that when you launch a plan, it will be launched with the profile options specified for you, and not the user who created the plan.

### To launch a plan:

1. On the Transportation Planner Navigator, select Launch Plan. The Launch Transportation Planning Process window appears with the Parameters window on top of it.

You can also access the Launch Transportation Planning Process window in the following ways:

- On the Transportation Plan Names window, select the plan that you want to run and then click Launch Plan. Note that the Launch Plan button is enabled only if you have defined plan options for a plan.
- On the Planner Workbench, select your plan on the navigation tree and then select Launch Plan from the Plan menu.

#### Launch Plan Parameters Window

Parameters

Plan Name **HBPL-9-P01** Pooling for inbound shipments

Use setup data from most recent plan **No**

Run Audit Exceptions **Yes**

Launch Planner **No**

OK Cancel Clear Help

2. In the Parameters window, select your Plan Name. If you accessed the Launch Plan functionality from the Transportation Plan Names window or from the Planner Workbench, then the system populates this field with the Plan Name you selected.
3. In the Use setup data from most recent plan field in the Parameters window, choose No if you want to re-capture all the setup information, such as, carriers, customers, and suppliers sites along with the transaction information including delivery lines, deliveries, and trips. If you want to capture only the current transaction information including delivery lines, deliveries, and trips pertaining to the plan, choose Yes. The planning engine uses setup data from the most recent snapshot.

4. In the Run Audit Exceptions field in the Parameters window, choose Yes if you want to perform the audit along with data snapshot. Whether or not you choose to perform the audit, the Launch Plan process generates all the exceptions related to the plan. You can view these exceptions on the plan output windows after the plan has run successfully.
5. In the Launch Planner field in the Parameters window, choose Yes to run plan optimization along with data snapshot.
6. Click OK on the Parameters window. The Parameters window closes and the system populates the Parameters field on the Launch Transportation Planning Process window with the selected Plan Name and parameters.

#### **Launch Transportation Planning Process Window**

**Run this Request...**

Name: **Launch Transportation Planning Process**

Parameters: **HBPL-9-P01:No:Yes:No**

Language: **American English**

**At these Times...**

Run the Job: **As Soon as Possible**

**Upon Completion...**

☒ Save all Output Files

Notify:

Print to: **noprint**

Buttons: Copy..., Language Settings..., Schedule..., Options..., Help (H), Submit, Cancel

When you select the Launch Plan button or menu option, the system populates the Name field in the Launch Transportation Planning Process window with the value Launch Transportation Planning Process. Make sure that this is the option selected in the Name field.

7. Click Submit on the Launch Transportation Planning Process window. This triggers a concurrent request for plan optimization.

Also see 'Scheduling Concurrent Manager Requests for Launch Plan, page E-1 for more information.



## Defining User-Specific Default Plan Options

In defining a new plan, you need to set up all the information on the Plan Options window, such as scope, consolidation strategies, optimization parameters, costs, and auto-release rules. Typically, the business processes that the plan options and the planner tasks encapsulate do not change on a frequent basis. Oracle Transportation Planning enables you to define default plan options in a template, which you can then apply automatically to new plans that you create. Note that each user has a unique set of default options.

To define your own default plan options template, select Define Default Template from the Plan Options menu on the Transportation Planner Navigator.

When you first open the default template, the Plan Options window appears with the seeded plan options. You can change the seeded options and save them to create your own default template. You can save the template by selecting Save from the File menu. This set of values becomes your default template. To change your default plan options at any time, choose Define Default Template from the Plan Options menu on the Transportation Planner Navigator.

Default plan options are not tied to any particular plan. When you first access the Plan Options window to create a new plan, you see the values as specified in the default plan options template. You can change these default plan options and save the changes. This new set of values then becomes the plan options set for your new plan.

### Default Plan Options Window: Scope Tab

Plan Options

Scope Optimization Costs Constraints Auto-Release

System Date Offset

Plan Days

Plan transportation for

☒ Outside Processing

☒ Drop Shipments

Facilities to be planned

Facility	Description	Internal Inbound <input type="checkbox"/> Select All	Internal Outbound <input type="checkbox"/> Select All	External Inbound <input type="checkbox"/> Select All	External Outbound <input type="checkbox"/> Select All
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Add All Facilities

## Scope

The Scope tab in the Plan Options window provides fields for Plan Start Date and Plan End Date. In the case of default plan options, the system replaces these two fields with the two fields, System Date Offset and Plan Days.

As an example of how these parameters work, suppose that you specify the System Date Offset to be 1 and the Plan Days to be 3 on the default Plan Options window. If you create a new plan on 11-Aug-03, the Plan Start Date on the plan automatically becomes 12-Aug-03 (System Date plus System Date Offset) and the Plan End Date automatically becomes 15-Aug-03 (System Date plus System Date Offset plus Plan Days).

Note the following:

If Day Start Time = 00:00

End Date = System Date + System Date Offset + Plan Days - 1

Else End Date = System Date + System Date Offset + Plan Days

Note that the System Date Offset must be greater than or equal to zero and the Plan Days value must be greater than or equal to one.

**Example 1**

Start Date = 11-Aug-03

Day Start Time = 00:00

Plan Days = 1

Then End Date = 11-Aug-03 (11-Aug-03 + 1 - 1)

And End Time = 23:59

**Example 2**

Start Date = 11-Aug-03

Day Start Time = 05:00

Plan Days = 1

Then End Date = 12-Aug-03 (11-Aug-03 + 1)

And End Time = 04:49

See 'Specifying Plan Scope, page 6-5 for more information.

## **Optimization**

Specify your optimization strategies on the Optimization tab in the Plan Options window.

### Default Plan Options Window: Optimization Tab

Parameter	Value	Unit of Measurement
Target Truckload Utilization	90	Percentage
Minimum Truckload Utilization	50	Percentage
Local Pooling Shipment Size Limit	10	Percentage
Local Pooling Radius	10	Percentage
Stop Neighborhood Radius	300	Mile
General Pooling Radius	20	Percentage
Maximum Deadhead Distance	300	Mile

As seeded in Oracle Transportation Planning, the option Advanced Consolidation and Mode/Carrier Selection remains selected and also all corresponding check boxes: Pooling, Multi-Stop Truckloads, and Continuous Moves.

The system displays the seeded optimization parameter values on the tab. You can select any other optimization strategy on this tab.

If you select a strategy other than Advanced Consolidation and Mode/Carrier Selection and then access the Plan Options window to create a new plan, the Plan Options window appears with the selections made on the default template. If you change the selection to Advanced Consolidation and Mode/Carrier Selection, the system populates the parameter values automatically with the values seeded in Oracle Transportation Planning.

For more information, see 'Specifying Plan Optimization Strategies, page 6-13.

## Costs

On the Costs tab in the Plan Options window, specify the costs you want to consider by default in optimizing your plans.

### Default Plan Options Window: Costs Tab

Include the following costs for optimization:

**Truckload (TL) Costs**

- ☒ Loading and unloading charges
- ☒ Layover charges
- ☒ Origin and destination surcharges
- ☒ Other accessorial charges

**Less Than Truckload (LTL) Costs**

- ☒ Discounts
- ☒ Other accessorial charges

**Parcel Costs**

- ☒ Discounts
- ☒ Other accessorial charges

As seeded in Oracle Transportation Planning, all costs are selected for consideration in your plan. You can select the costs that you want the planning engine to consider in all your plans and save them.

The costs you specify here apply to all the plans in the calculation of the transportation cost. By default, the planning engine includes all the costs you specify in the optimization process unless you specifically eliminate the costs you do not want to consider when creating a new plan.

For more information, see 'Specifying Costs to Consider in Optimization, page 6-22.

## Constraints

On the Constraints tab in the Plan Options window, specify the constraints that you want the planning engine to consider by default in planning your shipments.

### Default Plan Options Window: Constraints Tab

The screenshot shows the 'Default Plan Options Window: Constraints Tab'. The window has a title bar 'Plan Options' and tabs for 'Scope', 'Optimization', 'Costs', 'Constraints' (selected), and 'Auto-Release'. Below the tabs, there is a 'Carrier Commitment Set' dropdown menu and a 'Description' text field. The main area is divided into two sections: 'Select Constraints' and 'Hard Constraints Selected'. The 'Select Constraints' section contains a list of 18 constraints, including 'Carrier CM rules - maximum total distance', 'Carrier CM rules - maximum total time', 'Carrier commitments - spend based', 'Carrier commitments - trip based', 'Carrier commitments - weight based', 'Carrier service dimensional constraints', 'Carrier standing appointments', 'Carrier trip rules - interspersed pick-ups and drop-offs', 'Carrier trip rules - maximum driving time in 24 hours', 'Carrier trip rules - maximum on-duty time in 24 hours', 'Carrier trip rules - maximum total distance', 'Carrier trip rules - maximum total distance in 24 hours', 'Carrier trip rules - maximum total time', 'Carrier trip rules - minimum layover time', 'Carrier trip rules - number of stops', 'Customer - customer compatibility', 'Customer - facility compatibility', and 'Early delivery'. To the right of this list are four arrow buttons (right, double right, left, double left). The 'Hard Constraints Selected' section is an empty box. Below it is the 'Soft Constraints Selected' section, which contains a table with two columns: 'Constraints' and 'Penalty'. The 'Constraints' column has a dropdown menu, and the 'Penalty' column has a text field. At the bottom of the window, there is a horizontal scrollbar.

When you first view the Constraints tab in the default plan options window, all constraints you can select are listed in the Available Constraints box. You can specify the constraints that the planning engine must consider by default in all your plans. Select the relevant constraints from this box and move them over to the Hard Constraints Selected or Soft Constraints Selected box using the arrow buttons. You can also specify the carrier commitment set to consider by default for your plans. You can select a different carrier commitment set on the Plan Options window while defining plan options for a new plan.

In the Plan Options window, you can eliminate or add constraints to consider while creating a new plan, regardless of your selections in the default plan options template.

The system automatically populates the units of measure for the various constraint penalty values you specify on the default plan options template using units of measure you specified on the Global Shipping Parameters window. You cannot change these units of measure on the default plan options template.

For more information on Carrier Commitment Sets and Soft Constraints, see 'Step 17: Set Up Carrier Commitments, page 4-34 and 'Specifying Constraints and Penalties, page 6-24 respectively.

## Auto-Release

On the Auto-Release tab in the Plan Options window, specify your default preference for releasing planned shipments.

**Default Plan Options Window: Auto-Release Tab**

The screenshot shows the 'Plan Options' window with the 'Auto-Release' tab selected. The window has a title bar with 'Plan Options' and standard window controls. Below the title bar are five tabs: 'Scope', 'Optimization', 'Costs', 'Constraints', and 'Auto-Release'. The 'Auto-Release' tab is active. Inside the tab, there are three radio button options: 'Do not auto-release' (which is selected), 'Auto-release entire plan', and 'Auto-release individual loads using auto-release rule set'. To the right of the third option is a text field containing the value 'RSBC4567' and a button labeled 'Maintain Rule Set'.

The seeded selection for auto-release in Oracle Transportation Planning is Do not auto-release. You can select the option of your choice as to whether to auto-release the entire plan or to auto-release individual trips based on an auto-release rule set.

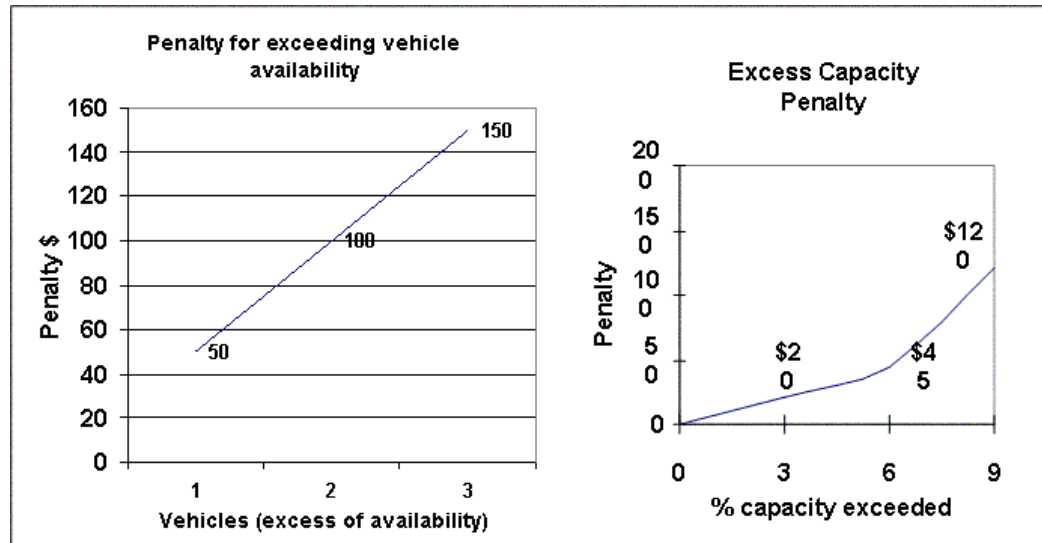
For additional information on auto-release rules, see 'Defining Auto-Release Rules for Planned Trips, page 6-35. For more information on releasing plans, see Releasing Plan Output for Execution, page 16-1.

## Constraints and Penalty Based Planning Engine Behavior

The following example illustrates the behavior of the planning engine while using the hard constraint approach and the penalty approach.

'Penalty Functions for Illustration of Planning Engine Behavior with Constraints , page 6-54and Penalties shows the penalty cost functions for exceeding vehicle availability and for exceeding vehicle's effective capacity.

**Penalty Functions for Illustration of Planning Engine Behavior with Constraints and Penalties**



Consider 20 shipments originating from San Jose and destined for Las Vegas. Assume that all the orders are from the same origin to the same destination and have the same due date. Assume volume capacity of the trailer to be the active constraint in this case. The specified effective capacity is 15000 ft<sup>3</sup>, while the absolute maximum capacity is 18000 ft<sup>3</sup>. The shipper company uses truckload and less-than-truckload carriers.

Carrier	Commitment	Truckload Rate	Available Vehicles	Less-than-Truckload Rate	Transit Time
ABC	Yes	\$900	2 per day	--	24 hours
PQR	No	\$1000	1 per day	--	24 hours
XYZ	Yes	--	--	75 cwt (per hundred weight, that is, per hundred pounds)	40 hours

Yes in the Commitment column of the table indicates that the shipper has made specific commitments of trips, weight, or revenue to that carrier.

Consider the shipment information to be as follows:



Order Number	Weight (Lbs)	Volume (ft <sup>3</sup> )	Order Number	Weight (Lbs)	Volume (ft <sup>3</sup> )
Order 1	460	4600	Order 11	220	2200
Order 2	450	4500	Order 12	180	1800
Order 3	380	3800	Order 13	170	1700
Order 4	370	3700	Order 14	170	1700
Order 5	340	3400	Order 15	140	1400
Order 6	310	3100	Order 16	110	1100
Order 7	290	2900	Order 17	105	1050
Order 8	280	2800	Order 18	90	900
Order 9	270	2700	Order 19	90	900
Order 10	260	2600	Order 20	85	850

The planning engine consolidates the loads as follows:

**Truckload 1 containing the following orders:**

Order Number	Volume	Weight
Order 1	4600	460
Order 2	4500	450
Order 3	3800	380
Order 12	1800	180

Total Volume = 14700 ft<sup>3</sup>

Total Weight = 1470 lbs

**Truckload 2 containing the following orders:**

Order Number	Volume	Weight
Order 4	3700	370
Order 5	3400	340
Order 6	3100	310
Order 7	2900	290
Order 13	1700	170

Total Volume = 14800 ft<sup>3</sup>

Total Weight = 1480 lbs

**Truckload 3 containing the following orders:**

Order Number	Volume	Weight
Order 8	2800	280
Order 9	2700	270
Order 10	2600	260
Order 11	2200	220
Order 14	1700	170
Order 15	1400	140
Order 16	1100	110

Total Volume = 14500 ft<sup>3</sup>

Total Weight = 1450 lbs

**Direct, less-than-truckload containing the following orders:**

Order Number	Volume	Weight
--------------	--------	--------

Order Number	Volume	Weight
Order 17	1050	105
Order 18	900	90
Order 19	900	90
Order 20	850	85

Total Volume = 850 ft3

Total Weight = 370 lbs

## Restrictions

### Planning Engine Behavior when Using Penalty Based Approach

The following scenarios involving penalty costs associated with late deliveries, exceeded vehicle capacity, and exceeded vehicle availability illustrate the planning engine behavior with respect to penalties.

Suppose that a fixed penalty of \$50 is associated with violating a preferred carrier commitment. Any remaining constraints have very high penalties such that the planning engine does not find it cost efficient to violate them.

#### Scenario 1: Vehicle Availability as Soft Constraint

Hard constraints: vehicle capacity, late delivery, and carrier commitments

Soft constraints: vehicle availability

In this case, both late delivery and carrier commitments are hard constraints. However, if you send the orders by less-than-truckload, they are late by 16 hours because less-than-truckload has a 40 hour transit time while the required transit time is 24 hours. In such a case, the late delivery takes precedence over carrier commitment constraints and the engine honors the late delivery constraint and violates the carrier commitment.

The preferred carrier for truckload is ABC who has 2 trucks available per day. The non-preferred carrier PQR has one vehicle available. Since vehicle availability is a soft constraint, the engine exceeds the vehicle availability of the preferred carrier by 1 vehicle. The planning engine calculates the cost as follows:

- Truckload cost = 3 trucks \* \$900 + 1 truck \* \$1000 = \$3700
- Penalty cost for exceeding vehicle availability by 1 vehicle is \$50.
- Total plan cost = \$3700+\$50 = \$3750

### Scenario 2: Carrier Commitments as Soft Constraint

Hard constraints: vehicle availability, vehicle capacity

Ignore: late delivery

Soft constraints: carrier commitments

In this case, the planning engine evaluates the following options:

1. Two truckloads by preferred carrier ABC and the remaining orders by preferred less-than-truckload carrier XYZ respecting carrier commitments
2. Two truckloads by preferred carrier ABC, one truckload by carrier PQR, and the remaining orders by preferred less-than-truckload carrier XYZ minimizing late deliveries

The engine evaluates the costs of the above options as follows:

1. Two truckloads by preferred carrier ABC and the remaining orders by preferred less-than-truckload carrier XYZ
  - Truckload cost on preferred carrier = 2 trucks \* \$900 = \$1800
    - Less-than-truckload cost of remaining 1820 Lbs =  $1820 * \$75/100 = \$1365$
  - Total plan cost = \$1800 + \$1365 = \$3165
2. Two truckloads by preferred carrier ABC, one truckload by carrier PQR, and the remaining orders by preferred less-than-truckload
  - Truckload cost on preferred carrier = 2 trucks \* \$900 = \$1800
    - Truckload cost on non-preferred carrier = 1 vehicle \* \$1000 = \$1000
    - Less-than-truckload cost of the remaining load; order 17, order 18, order 19, order 20, which together weighs 370Lb is  
 $370 * \$75/100 = \$277.50$
  - Fixed penalty for violating the commitment to the less-than-truckload carrier is \$50
  - Total plan cost = \$1800 + \$1000 + \$277.50 + \$50 = \$3127.50

In this scenario, the planning engine recommends trips as per Option 2 since it is more cost optimal than Option 1.

### Scenario 3: Vehicle Capacity and Vehicle Availability as Soft Constraints

Hard constraints: late delivery

Soft constraints: vehicle capacity, vehicle availability

Ignore: carrier commitments

Since late delivery is a hard constraint, the planning engine evaluates the following options to meet the orders on time:

1. Two truckloads by preferred carrier ABC, one truckload by carrier PQR, and exceed vehicle capacity on all three vehicles
2. Three truckloads by preferred carrier ABC, one truckload by carrier PQR, and exceed vehicle availability of carrier ABC

The engine evaluates the costs of the above options as follows:

1. Two truckloads by preferred carrier ABC, one truckload by carrier PQR, and exceed vehicle capacity on all three vehicles.

Note that the specified effective capacity is 15000 ft<sup>3</sup> and the absolute volume capacity of 18000 ft<sup>3</sup> cannot be exceeded.

#### Truckload 1

Order Number	Volume (ft <sup>3</sup> )
Order 1	4600
Order 2	4500
Order 3	3800
Order 12	1800
Order 18	900

Total Volume = 15600 ft<sup>3</sup>

Vehicle capacity exceeded =  $((15600 - 15000)/15000) * 100 = 4\%$

#### Truckload 2

Order Number	Volume (ft <sup>3</sup> )
Order 4	3700
Order 5	3400
Order 6	3100

Order Number	Volume (ft <sup>3</sup> )
Order 7	2900
Order 13	1700
Order 19	900

Total volume = 15700 ft<sup>3</sup>

Vehicle capacity exceeded =  $((15700 - 15000)/15000) * 100 = 5\%$

### Truckload 3

Order Number	Volume (ft <sup>3</sup> )
Order 8	2800
Order 9	2700
Order 10	2600
Order 11	2200
Order 14	1700
Order 15	1400
Order 16	1100
Order 17	1050
Order 20	850

Total volume = 16400 ft<sup>3</sup>

Vehicle capacity exceeded =  $((16400 - 15000)/15000) * 100 = 9\%$

The planning engine calculates the total transportation cost as follows:

- Truckload cost on preferred carrier = 2 vehicles \* \$900 = \$1800
- Truckload cost on non-preferred carrier = 1 vehicle \* \$1000

- Excess vehicle capacity penalty for truckload 1 (4% excess) = \$45
  - Excess vehicle capacity penalty for truckload 2 (5% excess) = \$45
  - Excess vehicle capacity penalty for truckload 3 (9% excess) = \$120
  - Total plan cost = \$1800 + \$1000 + \$45 + \$45 + \$120 = \$3010
2. 3 truckloads through preferred carrier ABC, 1 truckload through carrier PQR, and exceed vehicle availability of carrier ABC.
- Truckload cost on preferred carrier = 3 vehicles \* \$900 = \$2700
  - Truckload cost on non-preferred carrier = 1 vehicle \* \$1000 = \$1000
  - Penalty cost of exceeding vehicle availability = \$50
  - Total plan cost = \$2700 + \$1000 + \$50 = \$3750.

In this scenario, the planning system recommends trips as in option 1 since it is more cost optimal than option 2.





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# Planning Palletized Freight

This chapter covers the following topics:

- Overview of Planning Palletized Freight
- Pallet Definition
- Pallet Attributes
- Item-Pallet Association
- Pallet Stacking
- Vehicle Pallet Capacity
- Order Pallet Count
- Planning Engine Behavior with Palletization

## Overview of Planning Palletized Freight

Pallets unitize load items for productive handling. Instead of handling each package or item individually, facility personnel can move many packages or items on a pallet. This speeds the loading and unloading process and reduces labor requirements. Oracle Transportation Planning models palletized operations considering how items are loaded onto pallets as well as the number of pallets any vehicle can accommodate.

Oracle Transportation Planning provides an indicator that reflects whether or not all freight must be palletized. The indicator is part of the plan options you select when creating a plan. The Palletized Planning check box on the Optimization tab in the Plan Options window represents the indicator. Leave this check box unchecked if you do not want to palletize all of your freight but want either to palletize no freight at all or to mix palletized and non-palletized freight operations.

If you choose palletized planning, all items shipped are treated as palletized. The system runs a preprocessor to estimate the number of pallets required for each shipment that is not pre-palletized in the input. Load quantity that can be fit into a vehicle is based on all capacity measures: weight, volume, and pallets.

If you do not select the Palletized Planning check box, any freight indicated as palletized in the input remains palletized and any freight not indicated as palletized is not palletized. Load quantity that can be fit into a vehicle is based on all capacity measures: weight, cube, and pallets. However, only freight that is pre-palletized in the input counts against pallet capacity. Note that the planning engine does not incorporate any assumptions as to the stacking of pallets. The planning engine ignores all load configuration issues.

**Note:** All pre-palletized shipments in Oracle Transportation Planning appear as delivery lines. A delivery line can be a container, which might be a carton, pallet, or any similar item that contains other delivery lines. Such a container detail has a volume that reflects the net volume of the loaded container and a weight that reflects the empty or tare weight of the container plus the weight of its load.

## Pallet Definition

In Oracle Transportation Planning, pallets are defined as items with container type equal to a specified pallet type. See 'Step 4: Set Up Items, page 4-4 for more information.

You need to specify the container type that is to be used as the pallet type. To specify this container type, use the Pallet Item Type field on the Transportation tab in the Global Shipping Parameters window. You can access the Global Shipping Parameters window using the Manufacturing and Distribution Manager responsibility.

You also need to specify a default pallet to plan for palletized movement of any item that does not have a Container-Item relationship defined for a pallet-level container. Such items are related to the default pallet using the most constraining of the default pallet's weight or cube capacities. The default pallet is defined as an item within the specified Pallet Item Type and is specified as the default using the profile option MST: Default Pallet.

## Pallet Attributes

Oracle Transportation Planning requires that you specify the following pallet attributes.

### Weight

Specify the weight of the pallet along with its unit of measure on the Physical Attributes tab in the Master Items window in Oracle Inventory. You can access this window using the seeded Manufacturing and Distribution Manager responsibility. The weight specified here is used to determine the impact of the pallets on vehicle weight capacities as well as to determine weight-based cost for less-than-truckload shipments of palletized freight.

## Volume

Specify the volume of the pallet along with its unit of measure on the Physical Attributes tab in the Master Items window in Oracle Inventory. You can access this window using the seeded Manufacturing and Distribution Manager responsibility. The volume specified here is used to determine the impact of the pallets on vehicle cube capacities.

**Note:** If you intend to pack delivery lines on pallets before running the transportation plan, you must enter an estimate of the loaded volume of the pallet in the Volume field of the pallet item definition.

**Note:** It is mandatory that you specify the pallet weight and volume capacities for the default pallet. The default pallet is defined as an item and specified as default using the profile option MST: Default Pallet. When using the default pallet, where container-item relationships are not defined, the planning engine compares the weight or volume capacity of the items to the pallet capacity. In doing so, the more constraining of the weight or cube capacities of the default pallet is considered.

## Item-Pallet Association

Oracle Transportation Planning enables you to specify the following:

- Item-Pallet association
- Preferred and Non-Preferred pallets for an item
- Maximum number of item units that can fit on a pallet

You can associate a pallet with an item using the Container-Item Relationships window. Using this window, you can also specify preferred pallets with maximum item units that can fit on a pallet. To access the Container-Item Relationships window, use the seeded Manufacturing and Distribution Manager responsibility and select Container Load Details from the Shipping Setup menu.

For example, Item A can have a preferred pallet P1 onto which 100 units of Item A can fit. Similarly Item A can also have a non-preferred pallet P2 on which 50 units of item A can fit.

Oracle Transportation Planning considers only Container-Item relationships that relate items to pallet-level containers. The planning system ignores any intermediate Container-Item relationships, such as those of a base item to an intermediate carton or of a carton to a pallet.

For example, suppose relationships are defined such that item A can be packed into box B that in turn can be packed into box C, which in turn fits on Pallet P1. In addition, item A is associated with pallet P2 and 100 units of item A can fit on Pallet P2. In this example, the planning engine will ignore the item A-Box B-Box C-Pallet P1 specifications even if Box B is the preferred container for item A. The number of pallets required for item A will be based on the Item A-Pallet P2 association. The specified pallet item type is used to determine which of these relationships are direct to a pallet.

Any item that does not have any Container-Item relationship defined for a pallet-level container is related to the default pallet using the most constraining of the default pallet's weight or cube capacities. You must have specified this default pallet at the host company level using the MST: Default Pallet profile option. See 'Step 23: Set Up Profile Options, page 5-2 for more information.

For example, consider that the default pallet is specified as having a weight capacity of 500 lbs and a cube capacity of 400 ft<sup>3</sup>.

For an item weighing 10 lbs and occupying 5 ft<sup>3</sup>, the default pallet's weight capacity is the more constraining. This is because, if cube capacity is considered,  $400/5 = 80$  units of the item can fit on the pallet. If weight capacity is considered, only  $500/10 = 50$  units of the item can fit on the pallet.

If you consider an item that weighs 5 lbs and occupies 10 ft<sup>3</sup> per unit, then the cube capacity of the pallet becomes more constraining. This is because if weight capacity is considered,  $500/5 = 100$  units of the item can fit on the pallet. If cube capacity is considered, only  $400/10 = 40$  units of the item can fit on the pallet.

The planning engine considers the more constraining of the default pallet's weight and cube capacities for pallet count estimation.

## Pallet Stacking

Oracle Transportation Planning does not explicitly differentiate between pallets that can and cannot be stacked on top of each other. The planning system obtains the allowed stacking height as a value you manually enter in a field for each vehicle type. If none of the pallets that you work with can be stacked on top of each other, set the stacking height to one for all vehicle types.

You specify the allowed stacking height in the Pallet Stacking Height field on the Create Vehicle Type page in Oracle Transportation Execution.

You indicate the ability of a facility to handle stacked pallets when you set up the facility. You specify the ability to handle stacked pallets using the Handle Stacked Pallets check box on the Processing tab on the Create Facility page in Oracle Transportation Execution.

You can access the Create Vehicle Type and Create Facility pages using the seeded Oracle Transportation Super User or Transportation Manager responsibility.

If any vehicle has an allowed pallet stack height greater than one, Oracle Transportation Planning assumes that all pallets are stack-supporting and uses all pallet positions

accordingly. The only exception to this is when facilities that do not handle stacked pallets are involved. These are facilities for which the Handle Stacked Pallets check box on the Create Facilities page is not selected. In such cases, the number of pallet positions is reduced to the number in a single layer. Capacity calculations for any trip including stops at such facilities is based on a single layer of pallets.

## Vehicle Pallet Capacity

Along with vehicle weight and volume capacities, Oracle Transportation Execution considers the following vehicle pallet capacity attributes:

- Pallet floor space
- Pallet stacking height

**Note:** Vehicle pallet capacity is independent of the pallet type selected. Oracle Transportation Planning assumes the same vehicle pallet capacity regardless of the type or types of pallets loaded.

### Pallet Floor Space

Pallet Floor Space represents the number of pallets that fit in one layer in the vehicle. You can manually enter a value for the number of floor positions in the Pallet Floor Space field on the Create Vehicle Type page in Oracle Transportation Execution. To access this page, use the seeded Oracle Transportation Super User responsibility.

For example, if you specify the Pallet Floor Space to be 20, the planning engine bases calculations such that 20 pallets can fit in one layer on the vehicle floor.

If this field is blank, the system does not apply any pallet capacity constraint to the vehicle type.

### Pallet Stacking Height

Pallet Stacking Height refers to the number of pallet layers that can be stacked. You can specify this attribute using the Pallet Stacking Height field on the Create Vehicle Type page in Oracle Transportation Execution. To access this page, use the seeded Oracle Transportation Super User responsibility.

For example, if you specify the Pallet Stacking Height as 2, then the engine considers that 2 layers of pallets can be stacked in that vehicle. Thus, the pallet capacity of the vehicle is two times the Pallet Floor Space. At facilities that cannot handle stacked pallets, the vehicle pallet capacity remains equal to the Pallet Floor Space.

If this field is left blank, the system uses the default stacking height of one.

**Note:** If you do not want to specify the Pallet Floor Space and Pallet

Stacking Height separately but want to enter only a single number for pallet capacity, enter a vehicle type's total pallet capacity in the Pallet Floor Space field. Leave the Pallet Stacking Height field blank.

However, in doing so, you lose the ability to constrain pallet capacity for facilities that cannot handle stacked pallets.

**Note:** The Truckload Details window in Oracle Transportation Planning shows vehicle pallet capacity as the Pallet Floor Space multiplied by the Pallet Stacking Height, even though any facility on this truckload trip may not allow stacked pallets. However, the planning system considers the facility stacking attribute while building trips.

## Order Pallet Count

If you select palletized planning, Oracle Transportation Planning estimates the number of pallets required for each delivery whose contents are not pre-palletized. An order or delivery consisting of many order lines and, hence, many delivery lines, each of which is small in size, does not typically require one full pallet per delivery line. Multiple delivery lines are combined on a single pallet. Oracle Transportation Planning combines delivery lines into deliveries before calculating pallet requirements.

The total integral number of pallets required by a delivery is the rounded-up sum of the fractional pallet counts of the delivery lines in that delivery. Oracle Transportation Planning stores this delivery line pallet count in the delivery line entity.

Pallet count refers to the total number of pallets required to convey a delivery line or delivery. Oracle Transportation Planning estimates the pallet count and compares this to a total pallet capacity per vehicle.

The planning engine determines pallet count from the Container-Item relationships that indicate the number of units per pallet for each item type. This ratio is inverted to get fractional pallets per item unit. The fractional pallet values for all items in a delivery are then added and rounded up to obtain the total number of pallets in the delivery.

For example:

- The applicable container-item relationship indicates that the capacity of a delivery line item's default pallet is 50 each. If the delivery line has quantity 10, then the delivery line requires  
 $10/50 = 0.2$  of a pallet
- The applicable relationship is the default weight capacity of the default pallet, which is 250 lbs. If a delivery line contains 542.5 lbs of an item, then that delivery line requires

$$542.5/250 = 2.17 \text{ pallets}$$

If the two delivery lines are combined into a delivery, the delivery would require three pallets, rounding up the sum of 0.2 and 2.17.

During the transportation planning process, either during optimization or by user intervention, the delivery lines in a delivery may be split into multiple deliveries. For any newly split delivery, Oracle Transportation Planning determines the pallet count anew based on the fractional number of pallets in each constituent delivery line.

## Planning Engine Behavior with Palletization

The transportation planning engine runs a palletized plan to produce the following output:

- Delivery lines that are already palletized in Oracle Shipping Execution remain unchanged. Delivery lines with container type equal to the indicated pallet type indicate such delivery lines.
- The system estimates the number of pallets required for the non-palletized delivery lines. This calculation considers the item-pallet associations and the number of items that can fit on the specified pallet. The engine also considers the pallet weight or volume and the item quantity, volume, and weight where necessary.

- The system calculates the total number of pallets required for the delivery.

Total number of pallets for delivery = number of actual pallets + estimated number of pallets

The number of actual pallets is the number of pallets required for delivery lines already palletized in shipping execution. The estimated number is the planning system estimation of required pallets based on Order Pallet Count.

The following example illustrates the planning engine behavior based on item-pallet associations.

Item	Number of item units	Pallet Type
A	80	P1
B	70	P2
C	--	None specified

Eighty units of Item A can fit on to Pallet P1 and 70 units of Item B can fit on to Pallet P2. Item C has no item-pallet relationship specified. Item C weighs 10 lbs per unit and has a unit volume of 5 cubic feet.

Suppose that the default pallet P3 has 500 lbs weight capacity and 400 cubic feet cube capacity.

Since Item C has no Container-Item relationship specified, the number of pallets required for Item C is calculated using the default pallet P3. Hence, one unit of Item C consumes  $10/500 = 0.02$  pallet (based on the more constraining weight capacity of the default pallet).

Consider four delivery lines that are input to the planning engine.

Suppose that three delivery lines carry 100 units each of items A, B, and C. In addition, suppose that 200 units of an item D are already palletized in the transportation execution system, consuming 3 pallets of type P1.

In this case, the transportation planning engine arrives at the following pallet estimations:

- $100/80 = 1.25$  pallets of type P1 for 100 units of A
- $100/70 = 1.43$  pallets of type P2 for 100 units of B
- $100 * 0.02 = 2.0$  pallets of type P3 for 100 units of C (weight being the constraining capacity)
- 3.0 pallets of type P1 for 200 units of pre-palletized item D
- Total number of pallets required =  $1.25 + 1.43 + 2.0 + 3.0 = 7.68$ , which is rounded up to 8 pallets required for this delivery

The planning system uses the pallet floor space and stacking height to calculate vehicle capacity. The system considers the estimated and rounded up number of pallets against this vehicle capacity to determine whether the delivery can fit in one vehicle.



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## Data Snapshot

This chapter covers the following topics:

- Overview of the Snapshot Process
- Understanding Basic Data Elements
- Determinants for Transaction Data Snapshot
- Snapshot of Delivery Lines
- Snapshot of Deliveries
- Snapshot of Trips
- Routing Firm Trips and the Snapshot Process
- Out-of-Scope Deliveries and Trips
- Delivery Lines in Ship Sets
- Units of Measure in Transportation Execution and Planning Systems
- Performing the Snapshot

### Overview of the Snapshot Process

Oracle Transportation Planning integrates with Oracle Transportation Execution, Oracle Shipping Execution, and other Oracle applications to obtain plan input data and to facilitate plan output execution.

The information flow between Oracle Transportation Planning and these execution systems includes setup information and transaction information. See 'Oracle Transportation Planning Data Flow, page 8-3.

Setup information includes the following:

- Locations
- Organizations

- Items and Categories
- Bills of Material
- Routings
- Freight Classes
- Customers and Customer Sites
- Suppliers and Supplier Sites
- Vehicle Types
- Carriers and Carrier Attributes
- Calendars
- Global Shipping Parameters
- Regions and Zones
- Lanes and Lane Groups
- Facilities
- Carrier Commitments
- Vehicle Availability
- Distance and Transit Times
- Rates
- Compatibility Constraints

See "Transportation Execution System Setup, page 4-1 for more information on how these data are set up.

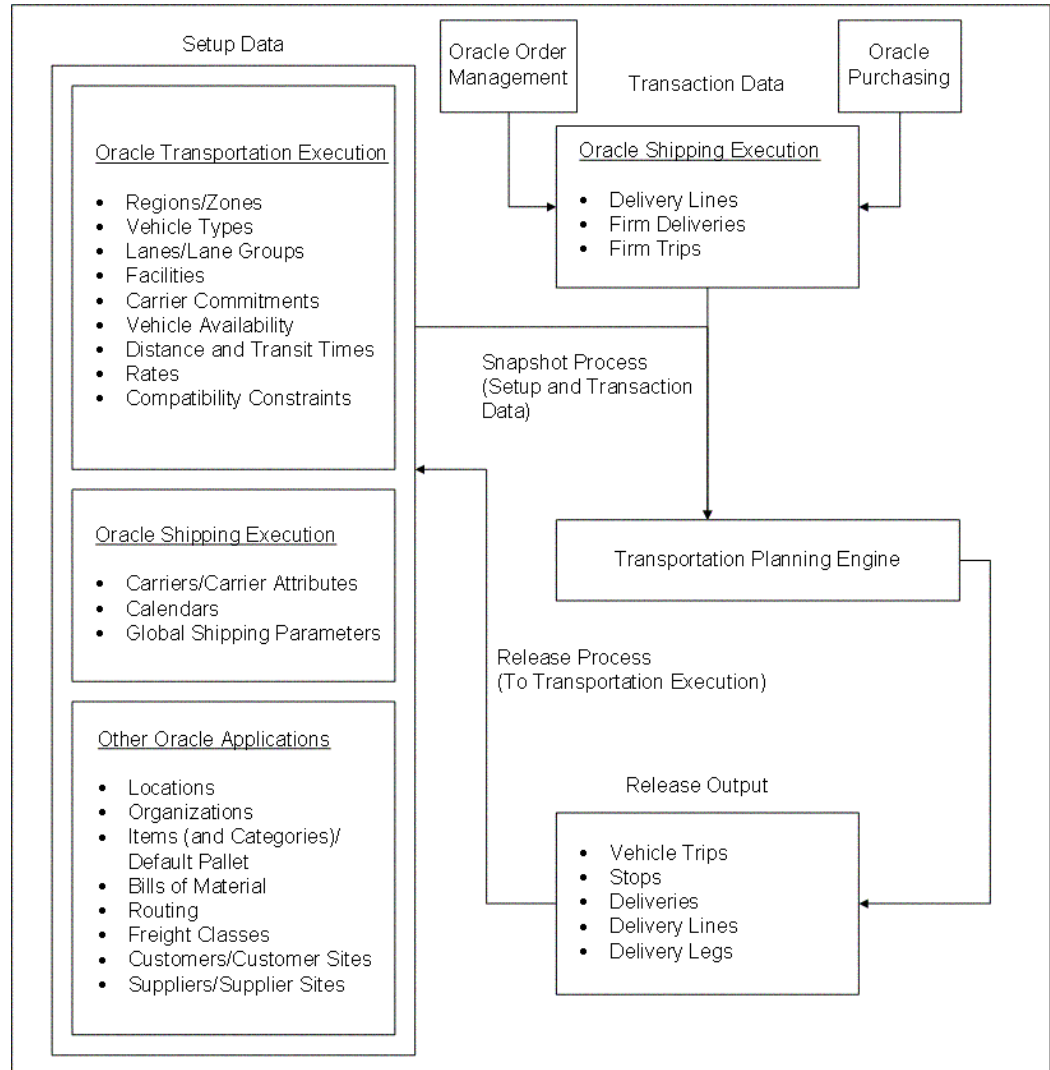
Oracle Transportation Planning obtains transaction information from Oracle Shipping Execution. Such information includes the following:

- Delivery Lines
- Firm Deliveries
- Firm Trips

The transportation planning system captures all of this information from the execution systems through a process called snapshot. Based on snapshot information, the

transportation planning engine generates continuous moves, trips, delivery legs, stops, and deliveries. The planning system releases this plan output to the Oracle Shipping Execution system through a process called release.

### Oracle Transportation Planning Data Flow



This chapter describes the transaction information and the snapshot process that captures these entities from the transportation execution system for consideration by the planning engine.

## Understanding Basic Data Elements

Basic data elements involved in transportation planning and execution include:

- Orders

- Order Lines
- Delivery Lines
- Deliveries
- Delivery Legs
- Trips
- Trip Legs
- Continuous Moves

For more information on these data elements, see 'Basic Data Elements, page 2-1.

**Note:** For details on how you can create and firm delivery lines, deliveries, and trips within the transportation execution system, refer to the *Oracle Shipping Execution User's Guide*.

## Determinants for Transaction Data Snapshot

Various flags and statuses determine the delivery lines, deliveries, and trips that are captured through snapshot from the transportation execution system for consideration in planning. The following table summarizes the flags, statuses, status codes, and other factors that determine whether or not a delivery line, delivery, or trip will be captured in the snapshot for planning. Details regarding the impact of these flags or statuses on the snapshot process are explained in the sections referenced in the following table.

Also see 'Out-of-Scope Deliveries and Trips, page 8-18.

Entity	Flag/Status/Other	Reference
Delivery Line	Planning Horizon	'Planning Horizon and Snapshot of Delivery Lines, page 8-6
		'Snapshot Process for Packaged or Containerized Delivery Lines, page 8-7
		'Out-of-Scope Deliveries and Trips, page 8-18
Delivery Line	Freight Terms	'Impact of Freight Terms on Snapshot of Delivery Lines, page 8-9

Entity	Flag/Status/Other	Reference
Delivery Line	Ignore for Planning Flag	'Ignore for Planning Flag Impact on Snapshot of Delivery Lines, page 8-10
Delivery Line	Release Status	'Release Status Impact on Snapshot of Delivery Lines, page 8-11
Delivery	Ignore for Planning Flag	'Ignore for Planning Flag Impact on Snapshot of Deliveries, page 8-12
Delivery	Firm Status	'Firm Status Impact on Snapshot of Deliveries, page 8-12
Delivery	Delivery Status Codes	'Note on Delivery Status Codes, page 8-13
Trip	Ignore for Planning Flag	'Ignore for Planning Flag Impact on Snapshot of Trips, page 8-15
Trip	Firm Status	'Firm Status Impact on Snapshot of Trips, page 8-14  'Routing Firm Trips and the Snapshot Process, page 8-16
Trip	Trip Status Codes	'Trip Status Codes, page 8-15
Trip	Trip Tendered Status	'Trip Tendered Status, page 8-15

For more information on Delivery Line Release Status, Delivery Status Codes, Trip Status Codes, and Trip Tendered Statuses, refer to the *Oracle Order Management User's Guide* and the *Oracle Shipping Execution User's Guide*.

## Snapshot of Delivery Lines

As part of the snapshot process, the transportation planning system captures delivery details based on the following criteria.

- Planning horizon
- Containerized delivery lines
- Profile option specified for Freight Terms
- Ignore for Planning flag status

- Release status

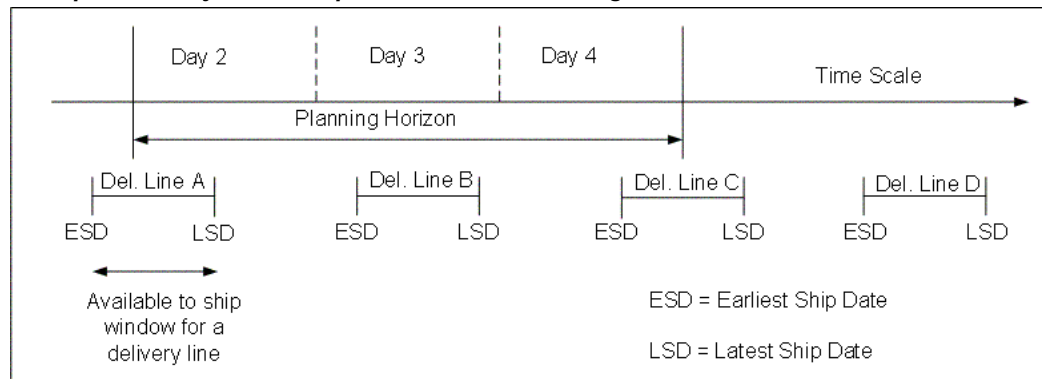
## Planning Horizon and Snapshot of Delivery Lines

The planner specifies the shipping time horizon for a transportation plan on the Plan Options window. See 'Defining Plans, page 6-1 for more information. The snapshot process captures delivery lines meeting other criteria if the available to ship windows of those delivery lines overlap with the planning horizon.

The time between the earliest available to ship date and the latest ship date of a delivery line indicates its available to ship window.

Consider the following example:

### **Example: Delivery Lines Snapshot Based on Planning Horizon**



The shipping horizon is 3 days, Day 2 through Day 4. Delivery line B lies within the plan horizon and the planning engine must consider this delivery line. Delivery line D lies outside the planning horizon and the planning engine need not consider Delivery Line D for the current plan horizon. Delivery line A has an earliest ship date outside of the plan horizon, while its latest ship date falls within the plan horizon. Delivery line C has an earliest ship date within the plan horizon, while its latest ship date lies outside the plan horizon. The planning engine considers both delivery line A and delivery line C because both delivery lines have ship windows that intersect the plan horizon.

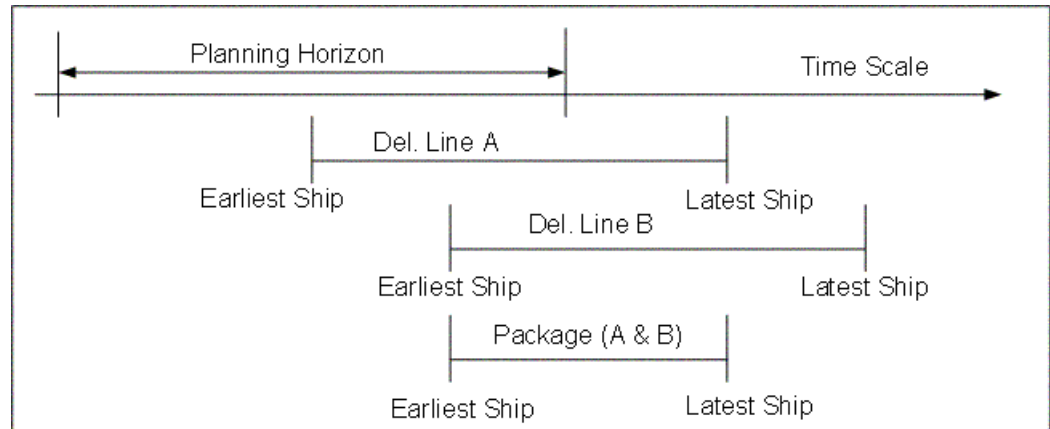
Note that Oracle Transportation Planning always captures any delivery line without specified earliest and latest ship dates. The planning system considers these delivery lines to be overlapping with the plan horizon. In such cases, after the delivery line is planned on the planning system and the delivery containing this delivery line is released to the transportation execution system, the transportation execution system alerts you to firm this delivery as Routing and Contents Firm. This is to ensure that the delivery will not be re-planned in further planning cycles that occur before it is to be shipped. The planning engine does not capture delivery lines that are in a Shipped status.

## Snapshot Process for Packaged or Containerized Delivery Lines

When packages are created in the transportation execution system, the result is an entity comprising multiple delivery lines. The system derives the dates on the package from the intersection of the earliest and latest ship dates and earliest and latest delivery dates of the delivery lines contained in the package.

The following example illustrates how the system arrives at the dates on a package.

### **Example 1: Snapshot of Packaged/Containerized Delivery Lines**

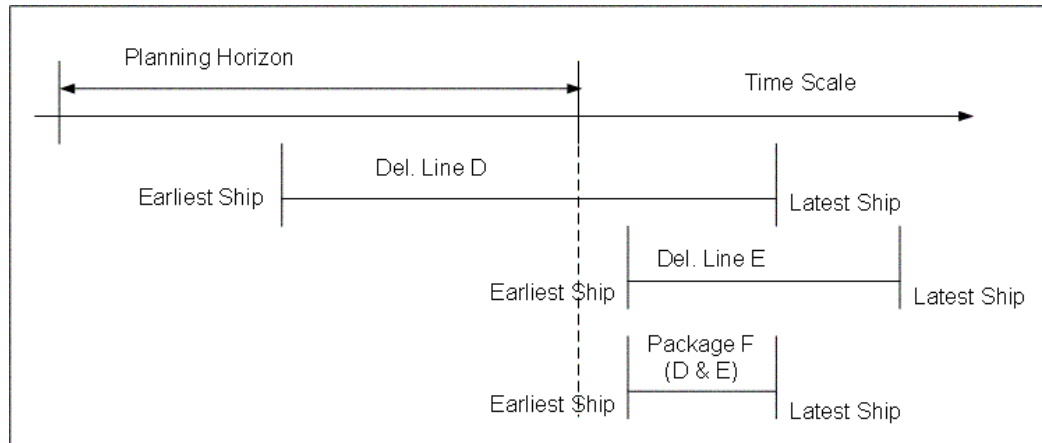


Delivery lines A and B have earliest available to ship dates that fall within the planning horizon, but latest ship dates that fall outside the planning horizon. Delivery lines A and B share a window of overlap within the planning horizon. A package containing delivery lines A and B has an earliest ship date equal to the earliest ship date of delivery line B and a latest ship date equal to the latest ship date of delivery line A. This is because delivery line B has the later earliest ship date between delivery lines A and B and delivery line A has the earlier latest ship date between delivery lines A and B.

The transportation planning engine captures a package only if the package's shipping window overlaps with the planning horizon. Note that the planning engine ignores any delivery lines in the package that are within the planning horizon if the package as a whole is outside the planning horizon.

Consider the following example:

**Example 2: Snapshot of Packaged/Containerized Delivery Lines**

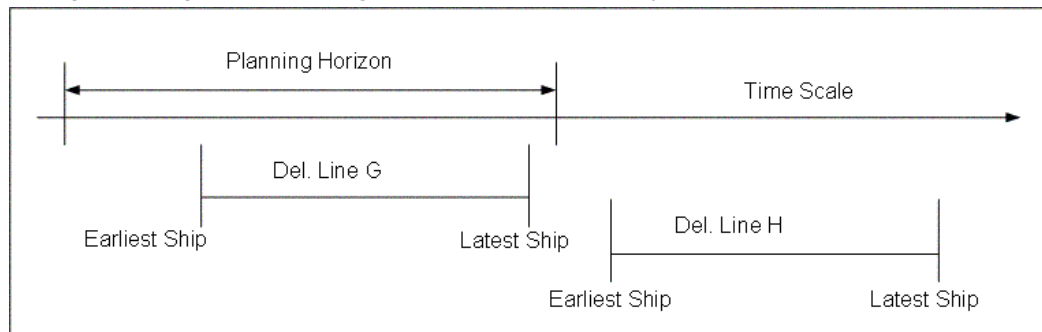


Delivery line D has an earliest ship date that falls within the planning horizon and a latest ship date that falls outside the planning horizon. Delivery line E has earliest and latest ship dates that fall outside the planning horizon. However, delivery lines D and E share a window of overlap. If package F is generated for delivery lines D and E, the earliest and latest ship dates of the package falls outside the planning horizon. This is because the earliest ship date of delivery line E falls outside the planning horizon. In this case, the planning engine does not consider the package for planning. The system ignores delivery line D, despite its shipping window that overlaps with the planning horizon, because package F, containing the delivery line D, lies outside the planning horizon.

The system does not generate a package for delivery lines that have no overlapping shipping windows. The system cannot derive the shipping dates for such a package.

Consider the following example:

**Example 3: Snapshot of Packaged/Containerized Delivery Lines**



Delivery line G has a shipping window that falls within the planning horizon, while delivery line H has a shipping window that falls outside the planning horizon. Delivery lines G and H have no shipping window overlap. A shipping window for a package



containing delivery lines G and H cannot be derived as they have no window of overlap.

## Impact of Freight Terms on Snapshot of Delivery Lines

Oracle Shipping Execution supports various freight terms such as Prepaid, Prepaid and Add, Collect, Prepaid and Add with cost convergence, Third Party Billing, and To be Decided. In addition, Oracle Shipping Execution also supports user defined Freight Terms.

In typical business processes, for orders with Prepaid freight terms, the seller bears the cost of transportation and specifies mode, carrier, and service. The company buying the goods bears the cost of transportation directly when the freight terms are Collect. In such cases, the buying company typically dictates the carrier, routing, and so on. When the freight terms are Prepay and Add, the supplier is billed for the transportation, but passes the cost on directly to the buying company. The determination of carrier and routing is sometimes performed by the seller and sometimes by the buyer. The net effect is that the shipper or host company usually plans the transportation for inbound Collect orders and outbound Prepaid orders. Inbound or outbound Prepay and Add orders may or may not be planned by the shipper.

Drop shipment orders travel directly from the shipper's supplier to its customer. In these cases, Prepaid freight terms indicate payment by the supplier; Collect indicates payment by the customer; and Third party billing typically indicates payment by the host company. Again, the planning and management of the transportation function is typically handled by the paying party. Prepay and Add scenarios may be planned by either the supplier or the customer, but usually not the host company.

Based on the above scenarios, you may not want Oracle Transportation Planning to plan orders with certain freight terms. For example, a planner may want to plan for only those orders where the freight terms indicate that the shipper bears the cost of transportation. You may not want to plan for shipments when a customer or supplier pays for them. To accommodate this requirement, Oracle Transportation Planning provides the following profile options.

Use the seeded Transportation Planning Administrator responsibility and the System Profile Values window to set up these profile values.

**Note:** These profile options do not impact inter-organizational movements, that is, shipments from one business unit to another within the same host company.

### **Profile Option for Freight Terms on Inbound Orders (Purchase Orders): MST: Inbound Freight Condition**

You can specify one of the following values for the profile option MST: Inbound Freight Condition:

- All: Specifying All indicates that you want to plan for inbound delivery lines with

any freight terms. In this case, freight terms have no impact on which inbound delivery lines are captured by the planning engine.

- **Collect Only:** Specifying Collect Only indicates that you want to plan for only those inbound delivery lines having the freight terms of Collect. The planning system does not capture other inbound delivery lines.

**Profile Option for Freight Terms on Outbound Orders (Sales Orders): MST:**  
Outbound Freight Condition

You can specify one of the following values for the profile option MST: Outbound Freight Condition:

- **All:** This indicates that you want to plan for outbound delivery lines with any freight terms. In this case, freight terms have no impact on which outbound delivery lines the planning engine captures.
- **Ignore Collect and Third Party Billing:** This indicates that you want to plan for outbound delivery lines not having the Freight Terms of Collect and Third Party Billing. The planning engine ignores the outbound delivery lines with Collect or Third Party Billing Freight Terms and captures the remaining outbound delivery lines.

**Profile Option for Freight Terms on Drop Shipments: MST: Drop Ship Freight Condition**

You can specify one of the following values for the profile option MST: Drop Ship Freight Condition:

- **All:** This indicates that you want to plan for drop ship delivery lines with any freight terms. In this case, freight terms have no impact on which drop ship delivery lines the planning engine captures.
- **Third Party Billing Only:** This indicates that you want to plan for only those drop ship delivery lines having the Freight Terms of Third Party Billing. The planning engine does not capture the remaining drop ship delivery lines.

## **Ignore for Planning Flag Impact on Snapshot of Delivery Lines**

You can set the Ignore for Planning flag to be enabled or disabled on a delivery line.

- If the Ignore for Planning flag is disabled, then the flag has no impact on whether or not the planning engine captures the delivery line.
- If the Ignore for Planning flag is enabled, the planning system ignores the delivery line. Note that a delivery line always has the Ignore for Planning flag enabled if the delivery associated with this delivery line or the trip associated with the delivery has an Ignore for Planning status. Similarly, a delivery or trip that is associated with a delivery line in the Ignore for Planning status must also be in the Ignore for

Planning status.

## Release Status Impact on Snapshot of Delivery Lines

Each delivery line has a Release Status. Note that the term Release Status does not refer to the process of releasing plan output from transportation planning to the execution system but, rather, to the process of releasing shipments for picking in the Warehouse Management System. The various values of the Release Status attribute are:

- Not Applicable
- Not Ready to Release
- Ready to Release
- Released to Warehouse
- Staged and Pick-Confirmed
- Back-Ordered
- Shipped
- Cancelled

Not Applicable indicates that the system may not have released the delivery line to Warehouse Management but, still, might have its transportation planned. An example is the drop ship scenario, in which the shipment does not originate at a host company warehouse.

Through the snapshot process, the planning system captures delivery lines in all release statuses except the delivery lines in Shipped, Cancelled, Interfaced, Received, Purged, or Closed statuses. Note that the planning engine plans for delivery lines in the Released to Warehouse and Staged and Pick-Confirmed statuses. Even if these delivery lines have already been planned, the planning system can re-plan them unless the deliveries to which such delivery lines belong are firmed. If you do not want to plan for delivery lines in these statuses, you must manually firm such deliveries or set up workflow to firm appropriate deliveries and trips automatically.

## Snapshot of Deliveries

The snapshot process considers all firm deliveries containing delivery lines that match the criteria described in the section 'Snapshot of Delivery Lines, page 8-5.

Each delivery in the transportation execution system has a Firm Status flag and an Ignore for Planning flag associated with it. The following sections explain the impacts of the statuses of these flags on the snapshot process of deliveries.

In no case does Oracle Transportation Planning capture a Not Firm delivery, even if it contains delivery lines that are captured in snapshot.

## **Firm Status Impact on Snapshot of Deliveries**

For details on the process of Firming, see 'Firming, page 9-1.

A delivery can have the following Firm statuses:

- **Routing and Contents Firm:** If a delivery line captured in the snapshot process is part of a Routing and Contents Firm delivery, the snapshot captures the delivery and all of its constituent delivery lines. Oracle Transportation Planning also maintains the delivery line associations for this delivery and honors the delivery's association to any trips associated with the delivery. Such trips have to be either Routing Firm or Routing and Contents Firm. The planning engine, therefore, honors the carrier, service, and vehicle type of the trip. Note that the planning engine will not split the delivery lines of a Routing and Contents Firm delivery, nor will it change the mode, carrier, service, and vehicle type associations of this delivery.
- **Contents Firm:** If a delivery line captured in the snapshot process is part of a Contents Firm delivery, the system also captures the delivery and all of its constituent delivery lines. The planning engine maintains the delivery line associations for this delivery and does not split the delivery lines associated with a Contents Firm delivery.
- **Not Firm:** This status may exist for manually created deliveries on the transportation execution system or deliveries that were released from Oracle Transportation Planning without firming. The planning engine does not capture a Not Firm delivery and does not respect such delivery's grouping of delivery lines or assignment to trips. Note that, if a delivery has a status of Not Firm and is already on an existing vehicle trip, then the vehicle trip can only have the Routing Firm or Not Firm status.

Also see 'Out-of-Scope Deliveries, page 8-18.

## **Ignore for Planning Flag Impact on Snapshot of Deliveries**

The following are the possible Ignore for Planning flag statuses for a delivery:

- **Ignore for Planning flag Disabled:** The planning engine captures deliveries and constituent delivery lines with the Ignore for Planning flag disabled.
- **Ignore for Planning flag Enabled:** The planning engine ignores this delivery and its associated delivery lines in the planning process. If this delivery is already in an existing trip, then the trip also needs to be in the status of Ignore for Planning, as must be the delivery lines associated with this delivery. Since the constituent delivery lines are all ignored, the circumstance to consider snapshot of such a

delivery does not arise.

## Note on Delivery Status Codes

A delivery can have the following status codes:

- Open
- Confirmed
- In Transit
- Closed
- Shipment Requested
- Shipment Cancellation Requested
- Shipment Advice Requested

If the delivery is in the Confirmed, In Transit, or Closed status, then, in the transportation execution system, the firm status of the delivery must be set to Firm. If the delivery is in the Shipment Cancellation Requested status, then, in the transportation execution system, the status flag of the delivery must be set to Ignore for Planning and the trip assigned to this delivery cannot be in a Routing Firm or Routing and Contents Firm status. Note that the planning engine does not capture the status code of a delivery. The planning engine captures deliveries based only on their firm status. However, due to the relationship described here, Oracle Transportation Planning does not snapshot deliveries or constituent delivery lines in the Confirmed, In Transit, Closed, or Shipment Cancellation Requested statuses.

**Note:** On the Delivery tab in the Shipping Parameters window of Oracle Shipping Execution, you can specify delivery grouping attributes. These are organization-specific delivery grouping attributes. You can access the Shipping Parameters window using the Manufacturing and Distribution Manager responsibility.

Oracle Transportation Planning considers grouping of deliveries based only on the Ship From Location and Ship To Location. When Oracle Transportation Planning is installed, you must not specify delivery grouping attributes other than Ship From Location and Ship To Location. Defining delivery grouping attributes other than Ship From Location and Ship To Location may cause the release process to fail. The release process fails for any delivery and its related trips planned in Oracle Transportation Planning that does not meet the delivery grouping attributes defined in Oracle Shipping Execution.

## Snapshot of Trips

The snapshot process considers Firm vehicle trips that contain firm deliveries with delivery lines that match the criteria explained in the section 'Snapshot of Delivery Lines, page 8-5. The trips can be Routing Firm or Routing and Contents Firm.

Each trip in the transportation execution system has a Firm Status flag and an Ignore for Planning flag associated with it. The following sections explain the statuses of these flags and their impact on the planning system's snapshot process.

In no case does Oracle Transportation Planning snapshot a Not Firm trip even if delivery lines that are captured in snapshot are assigned to the trip.

### Firm Status Impact on Snapshot of Trips

See 'Firming, page 9-1 for more information on firming.

- **Routing Firm:** Routing Firm indicates that only the itinerary and schedule of the vehicle trip is firmed. All stops on the trip are firm. That is, the system cannot add stops to or remove stops from the trip or re-time them. However, the planning system can add deliveries to or remove deliveries from the trip.

For Routing Firm trips that carry firm deliveries including delivery lines captured by the planning system, the planning system collects all the vehicle trip and stop information. The planning system also collects the delivery details and delivery legs of any firm deliveries associated with the Routing Firm vehicle trip. The planning engine does not alter the itinerary or schedule of such a trip, but may assign additional deliveries to it.

- **Routing and Contents Firm:** Routing and Contents Firm indicates that both the itinerary and schedule as well as the deliveries associated with the trip are firm. You cannot add or remove deliveries or stops to or from this trip.

The planning system collects these trips if they carry firm deliveries including delivery lines captured in the snapshot. However, the planning system does not replan the trips. The system only displays these trips on the plan output windows to provide a complete picture of the planned trips. Also, Oracle Transportation Planning includes these trips in calculating various key performance indicators, such as compliance with carrier contractual commitments.

- **Not Firm:** The Not Firm status indicates that the trip is not firm at all; you can change both its itinerary and schedule and the deliveries on the trip. The planning engine does not consider the vehicle trip and stops information of a Not Firm trip and does not associate any delivery lines to the trip. You may assign any delivery lines that were assigned to this trip in the source system to a new trip in the transportation planning system.

Also see 'Out-of-Scope Trips, page 8-21.

## Ignore for Planning Flag Impact on Snapshot of Trips

The following are the possible Ignore for Planning flag statuses of a vehicle trip:

- **Ignore for Planning Status Disabled:** The transportation planning system captures such trips and constituent deliveries and delivery lines in the snapshot process if they carry firm deliveries, which contain delivery lines captured by the plan.
- **Ignore for Planning Enabled:** The transportation planning system ignores the vehicle trip, deliveries, and delivery lines associated with this status. All the deliveries and delivery lines associated with a trip in this status also have the Ignore for Planning status enabled. The planning system does not capture such information even to display on the user interface or to include in the calculation of any Key Performance Indicator.

## Notes on Trip Statuses and Snapshot Process

The following sections explain how trip status codes and trip tendered statuses influence trip firm statuses and the snapshot process.

### Trip Status Codes

A trip can have the following status codes. These status codes affect trip Firm statuses:

- **Open:** The Open status indicates that the vehicle trip is planned and has not started. Changes to the trip in terms of carrier, service, vehicle type, and deliveries are still possible.
- **In Transit:** The In Transit status indicates that the trip has departed from its initial stop but has not yet arrived at its final stop; it is in transit. If a trip is in the In Transit status, then the firm status flag for the trip is Routing and Contents Firm and all the deliveries on this trip are Routing and Contents Firm. This also applies to deliveries that are to be loaded at future stops, where the in-transit trip has not yet reached.
- **Closed:** The Closed status indicates that this vehicle trip has completed its itinerary. If a trip is in the Closed status, then the firm status flag for the trip is Routing and Contents Firm and all the deliveries on this trip are Routing and Contents Firm.

### Trip Tendered Status

The following are the statuses of a trip with respect to tendering to carriers.

- **Accepted:** Accepted indicates that the trip is accepted by the carrier to which it was tendered.
- **Auto-Accepted:** The Auto-Accepted status indicates presumption of acceptance of the trip by the carrier to which it was tendered.

- **Awaiting Response:** Awaiting Response indicates the same status as Tendered.
- **Carrier Cancelled:** Carrier Cancelled indicates that the trip was tendered to a carrier who initially accepted the tender but, later on, cancelled its acceptance of the tender.
- **No Response:** No Response indicates that the time deadline for response from the carrier to which the trip was tendered has elapsed.
- **Open:** Open indicates that a trip is not yet tendered.
- **Rejected:** Rejected indicates that the trip was tendered to a carrier but is rejected.
- **Retendered:** Re-tendered indicates that the trip was rejected by one carrier and then tendered to another carrier.
- **Shipper Cancelled:** The Shipper Canceled status indicates that the order is cancelled by the shipper.
- **Tendered:** Tendered indicates that response is awaited from the carrier to whom the trip was tendered.

In most cases, if the trip tendered status is Tendered, Retendered, Awaiting Response, Auto-Accepted, or Accepted, then the trip is firmed in some way. If a tendered trip is in the Rejected, No Response, or Carrier Cancelled status, then the trip is changed to Not Firm. Any of these changes is accompanied by the appropriate propagation of firm status to deliveries assigned to the trip. This may vary according to a company's business processes. In any case, the planning system snapshot does not consider the trip tendered status; it merely considers the firm status. The transportation execution system ensures that the firm status is set appropriately to match the tendered status.

## Routing Firm Trips and the Snapshot Process

In addition to firm trips that carry delivery lines within the plan scope, Oracle Transportation Planning captures any routing firm trip with stops that meet any of the following criteria.

- Stops at the selected plan locations, that is, stops at the facilities selected in the Plan Options window, with departure time within the planning horizon.
- Stops at any consolidation, deconsolidation, or cross-docking location with arrival time within the planning horizon or up to a specified time after the end of the planning horizon.

A profile option specifies the time beyond the planning horizon up to which routing firm trips, with consolidation, deconsolidation, or cross-dock location arrival times within this time range, are captured in the snapshot. This profile



option is MST: Number of days added for routing firm trips. The default value for this profile is set to 7 days. You can change this value as desired.

These routing firm trips need not contain any deliveries of any sort. Snapshot does, however, capture any deliveries on these routing firm trips. Any deliveries on these trips that fall outside the plan scope are captured in the snapshot as out of scope. See 'Out-of-Scope Deliveries, page 8-18 for details.

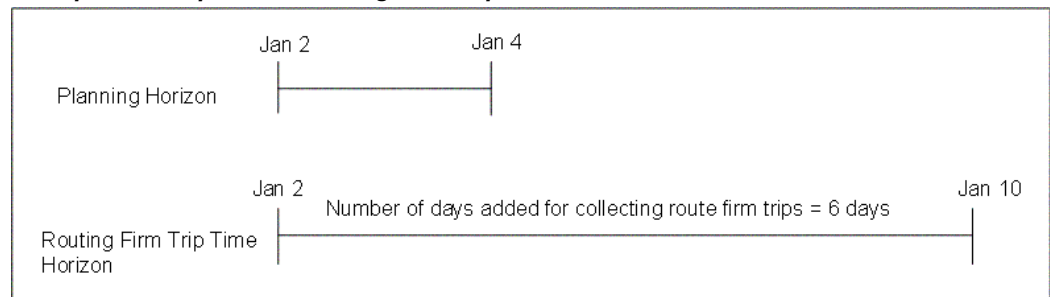
Consider the following example:

Suppose that the planning horizon is three days and that you are currently planning 02-Jan-04 through 04-Jan-04.

If you specify the number of days added for collecting routing firm trips as 6 days, then all routing firm trips that stop at any consolidation, deconsolidation, or cross-docking facilities selected in the plan scope, from 02-Jan-04 to 10-Jan-04, are captured in the snapshot.

'Example for Snapshot of Routing Firm Trips, page 8-17 illustrates the planning horizon and routing firm trip time horizon. The planning horizon extends from January 2 to January 4. The Routing Firm Trip Time Horizon extends from January 2 to January 10.

#### **Example for Snapshot of Routing Firm Trips**



Now consider three routing firm trips T1, T2, and T3 with stops as shown in the following table.

<b>Trip</b>	<b>Stops</b>	<b>Arrival Time at Consolidation, Deconsolidation, or Cross-Dock Facility</b>
T1	1, 2, 3, 4 Stop 3 is a consolidation facility	January 3, 10:00 am (Stop 3)
T2	6, 7, 8 Stop 7 is a cross-docking facility	January 8, 10:00 am (Stop 7)

<b>Trip</b>	<b>Stops</b>	<b>Arrival Time at Consolidation, Deconsolidation, or Cross-Dock Facility</b>
T3	9, 10, 11  Stop 10 is a deconsolidation facility	January 12, 10:00 am (Stop 10)

Assume that the plan start and end times are January 2, 00:00 and January 4, 23:59.

Since trip T1 arrives at consolidation facility 3 on January 3, 10:00, this routing firm trip is captured in the snapshot since the arrival time is within the plan scope.

Consider trip T2 arriving at cross-docking facility 7 on January 8. January 8 is beyond the Plan End Date of January 4, but within the additional number of days (January 10) specified for routing firm trips. Routing firm trip T2 is therefore captured in the snapshot.

Trip T3 arrives at deconsolidation facility 10 on January 12, which is both beyond the planning horizon as well as the additional number of days specified. This trip is therefore not captured in the plan run.

## Out-of-Scope Deliveries and Trips

The following sections discuss how the Oracle Transportation Planning engine can capture and handle deliveries and trips that are outside the specified plan scope.

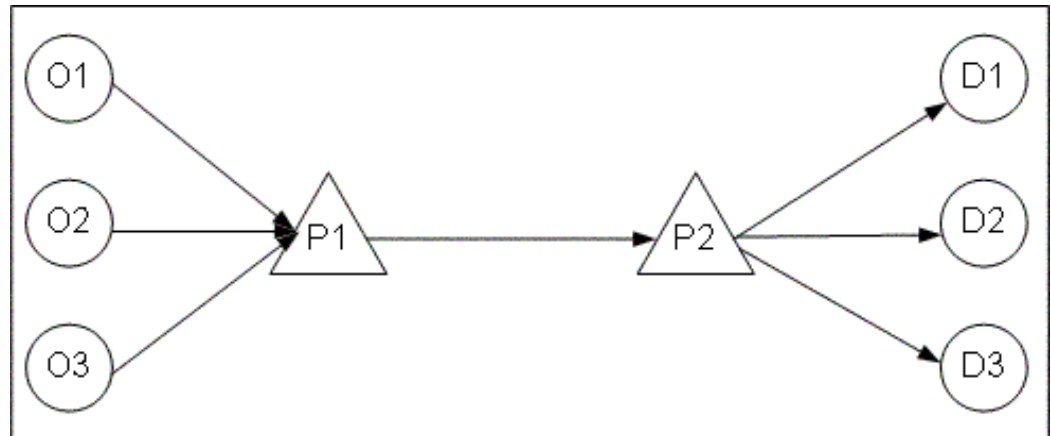
### Out-of-Scope Deliveries

In some cases, the planning engine may need to capture delivery lines that are outside the planning scope. See 'Specifying Plan Scope, page 6-5 for more information. The planning engine picks up all of the delivery lines that overlap with the planning horizon and any firm deliveries and vehicle trips associated with these delivery lines. Such a firm trip may carry other delivery lines that do not overlap with the planning horizon. Deliveries containing these out-of-scope delivery lines may also have delivery legs on other vehicle trips. This requires that the planning engine consider other firm delivery legs that carry the deliveries of the out-of-scope delivery lines. The planning engine does not capture the vehicle trips of an out-of-scope delivery line that are not firm.

The following example illustrates how the planning system captures out-of-scope deliveries.

Suppose that a shipper has a multi-tier pooling setup as illustrated in 'Out-of-Scope Deliveries, page 8-19. Shipments from origin facilities O1, O2, and O3 are consolidated at pool point P1 for line haul to pool point P2. At pool point P2, they are deconsolidated and are then carried to destinations D1, D2, and D3.

### ***Out-of-Scope Deliveries***



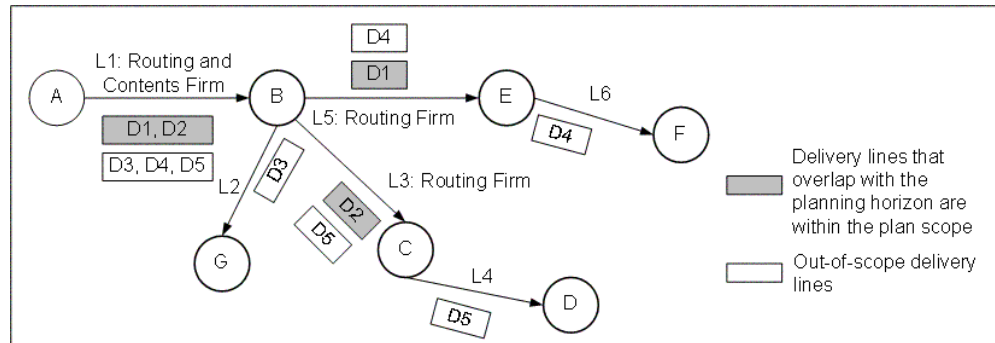
In the transportation plan, suppose that you select only facilities O1 and O2 (not O3) to plan. The line-haul trip from the consolidation center P1, however, includes delivery lines from not only O1 and O2 but also O3. If this line-haul trip is firmed, then the snapshot has to capture the trip because it carries delivery lines from O1 and O2. Thus, the snapshot has to capture all the deliveries on this trip, which includes those containing out-of-scope delivery lines from O3.

Another case where a delivery line is out-of-scope is when the planning engine has to pick up a firm trip that is associated with a delivery line within the plan scope, but the trip has other delivery lines, which are already in the Shipped status.

In such scenarios, the planning engine behaves as follows:

- The planning engine considers all delivery lines that overlap with the plan scope.
- The planning engine considers all the firm trips; Routing Firm or Routing and Contents Firm; that such delivery lines are on.
- If these firm trips contain any delivery lines that do not overlap with the plan scope, the planning engine considers all the firm delivery legs of the deliveries of such delivery lines. This enables complete display of the contents of such trips in Oracle Transportation Planning although it will not plan for these incomplete itineraries.

### Example for Snapshot of Out-of-Scope Deliveries



Deliveries D1, D2, D3, D4, and D5 travel from origin A to stop B on trip T1, which is Routing and Contents Firm. From stop B, delivery D3 proceeds to stop G on trip T2 and deliveries D2 and D5 proceed to stop C on Routing Firm trip T3. Delivery D5 then proceeds from stop C to stop D on trip T4. From stop B, deliveries D1 and D4 proceed to stop E on Routing Firm trip T5. From stop E, delivery D4 proceeds to stop F on trip T6.

T1, T2, T3, T4, T5, and T6 are vehicle trips present on the transportation execution system. D1 and D2 are deliveries within the plan scope, while D3, D4, and D5 are out-of-scope.

The planning engine captures the following information during snapshot:

- Delivery lines D1 and D2, since these delivery lines are within the plan scope.
- Trip T1, T3, and T5, since these are either Routing Firm or Routing and Contents Firm trips that contain the delivery lines within the plan scope.
- Delivery lines D3, D4, and D5, since these delivery lines are on the Routing and Contents Firm vehicle trip T1.

Note that the itineraries of D3, D4, and D5 are incomplete, since the planning engine does not consider trips T2, T4, and T6, regardless of their firm status.

### Firm Status Impact on Snapshot of Out-of-Scope Deliveries

A vehicle trip containing an out-of-scope delivery line always has a Firm status of either Routing Firm or Routing and Contents Firm. If the vehicle trip is Routing Firm, then the planner can add other deliveries to or remove deliveries that are not firm from this trip, in a manner that does not violate the Routing Firm condition. However, out-of-scope deliveries on this trip have a Firm status of Out of Scope. The planning system does not unassign such a delivery from the current load or re-assign it to another load.

Note that the planning engine captures the firm status of the out-of-scope delivery, even if it is not displayed. The planning system uses this firm status in the release process as explained in 'Releasing Plan Output for Execution, page 16-1.

Note that you may not be able to drill down to the different delivery legs of an out-of-scope delivery, since the itinerary may be incompletely captured from the execution system. The system validates the firm status of the delivery and then enables drill-downs.

## Out-of-Scope Trips

Consider a continuous move that exists on the transportation execution system with a Firm status and which includes firm trips T1 and T2. When the planning system picks up the delivery lines that overlap with the planning horizon, it may be possible that all the delivery lines on T2 are within scope, but the delivery lines on T1 are outside the planning horizon of the plan. For planning purposes, the planning engine picks up the stops, legs, and delivery lines on T1 so that the pricing of the continuous move is accurate. However, since this trip is beyond the scope of planning, the trip has the Firm status of Out of Scope.

A planner cannot change the Firm status of an out-of-scope trip or manually edit such a trip. The planning system cannot release this trip individually. However, if the planning system releases the continuous move, then the out-of-scope trip is also released.

Using the Planner Workbench, you can see the Truckload Details for this trip, but you cannot drill down to the different stops, legs, and deliveries. The system validates the firm status of the trip and then enables drill-downs.

## Delivery Lines in Ship Sets

This section describes how the Oracle Transportation Planning engine captures and handles delivery lines that are part of a ship set.

Ship sets constitute groups of order lines within an order that must ship together from their common origin to a common destination. Order lines within a ship set have the same scheduled ship date. The earliest and latest ship dates on a delivery line need not be based on the Scheduled Ship Date alone. See 'Shipping and Delivery Time Windows for Delivery Lines, page D-1 for more information. This may result in delivery lines within the same ship set having different ship windows.

The planning engine captures delivery lines only if their ship time windows overlap with the planning horizon. A ship set may consist of delivery lines, some of which have shipping windows that overlap with the planning horizon, while other delivery lines have shipping windows that do not. In this case, the planning system may not capture all the delivery lines required for the ship set for planning.

Instead of defining ship sets, an alternative and recommended method of keeping delivery lines together is by creating a Contents Firm Delivery on Oracle Shipping Execution. Oracle Transportation Planning captures a Contents Firm delivery if any of its constituent delivery lines has a ship window that overlaps with the planning horizon. In addition, the planning system always maintains the delivery line associations for this delivery thus ensuring the required ship set behavior.

For information on creating a Contents Firm delivery, refer to *Oracle Shipping Execution User's Guide*.

## Units of Measure in Transportation Execution and Planning Systems

The transportation execution and planning systems handle Units of Measure for deliveries, delivery lines, and vehicle trips in the following manner:

### Transportation Execution System Behavior

In the transportation execution system, the Unit of Measure Class is defined at the Organization level.

When the system builds a vehicle trip, it picks up the unit of measure from the first delivery assigned to that vehicle trip. The transportation execution system creates the delivery with the primary unit of measure of the unit of measure class defined for the ship-from organization.

The transportation execution system can potentially have different units of measure for different deliveries traveling on the same vehicle trip.

### Transportation Planning System Behavior

Oracle Transportation Planning stores eligible deliveries, delivery lines, vehicle trips, and stops in the base unit of measure of the unit of measure class defined in the Oracle Transportation Planning User Preferences. The system performs the Unit of Measure conversion during the snapshot process.

The transportation planning engine creates deliveries and vehicle trips in the base unit of measure of the unit of measure class defined in Oracle Transportation Planning. See 'Step 25: Set Up User Preferences, page 5-18 for more information.

At the time of release of each delivery, the system converts the units of measure to the base unit of measure of the unit of measure class for the delivery lines. You define these units of measure classes in the Global Shipping Parameters window during setup.

For Routing Firm trips that are captured from the transportation execution system, the system converts the planning system's base unit of measure to the primary unit of measure of the trip in transportation execution. This unit of measure applies to the trip legs and stops only.

For trips that are created on Oracle Transportation Planning, the unit of measure is picked up from the first delivery assigned to that vehicle trip.

## Performing the Snapshot

After having specified your plan options, use the following procedure to capture data through snapshot. For more information on defining plan options, see 'Defining Plans, page 6-1.

Note that, while it is possible to perform the snapshot process alone, without running

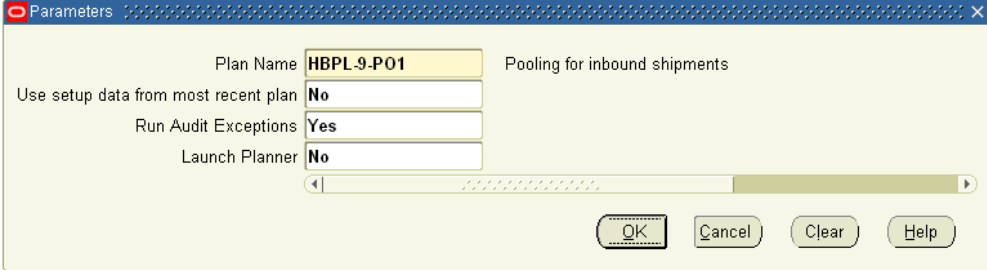
the plan or without generating audit reports, performing the snapshot alone does not provide you with information you can view. Data snapshot is typically performed along with Audit Report generation or plan optimization. You may choose to perform these processes separately or at the same time.

### To perform the snapshot:

1. On the Transportation Planner Navigator, select Launch Plan. The Launch Transportation Planning Process window appears with the Parameters window on top.

You can also access the Launch Transportation Planning Process and Parameters windows from the Transportation Plan Names window or from the Planner Workbench. On the Transportation Plan Names window, select the plan for which you want to perform the snapshot and click Launch Plan. Note that the Launch Plan button is enabled only for those plans for which you have defined plan options. On the Planner Workbench, select your plan on the navigation tree and then select Launch Plan from the Plan menu.

#### Launch Plan Parameters Window



2. In the Parameters window, select your Plan Name. If you had accessed the Launch Plan functionality from the Transportation Plan Names window or from the Planner Workbench, then this field is populated with the Plan Name you selected.
3. In the Use Setup Data from Most Recent Plan field in the Parameters window, choose No if you want to capture all the setup information including carriers, customers, suppliers, sites, and so on along with the transaction information. Transaction information includes delivery lines, deliveries, and trips. If you want to capture only the current transaction information pertaining to the plan, choose Yes.
4. In the Run Audit Exceptions field in the Parameters window, choose Yes if you want to perform the audit along with data snapshot. You can perform the audit later if desired. Choose No if you do not want to perform the audit along with the snapshot.
5. In the Launch Planner field in the Parameters window, choose Yes if you want to run plan optimization along with data snapshot. If you do not want to run plan

optimization along with the data snapshot, select No.

6. Click OK on the Parameters window. The Parameters window closes and the Parameters field on the Launch Transportation Planning Process window is populated with the selected Plan Name and parameters.

#### **Launch Transportation Planning Process Window**

**Run this Request...**

Name: **Launch Transportation Planning Process** Copy...

Parameters: **HBPL-9-P01:No:Yes:No**

Language: **American English** Language Settings...

**At these Times...**

Run the Job: **As Soon as Possible** Schedule...

**Upon Completion...**

☒ Save all Output Files

Notify:

Print to: **noprint** Options...

Help (H) Submit Cancel

The Name field in the Run this Request block of the Launch Transportation Planning Process window is, by default, populated with the value Launch Transportation Planning Process when you select the Launch Plan button or menu option. Make sure that this is the option selected in the Name field.

7. Click Submit on the Launch Transportation Planning Process window. This triggers a concurrent request for data snapshot.



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## Firming

This chapter covers the following topics:

- Overview of Firming
- Firm Statuses
- Effects of Firm Statuses
- Illustration of Propagation of Firming
- Changing Firm Statuses
- Illustration of Effects of Firm Status Changes

### Overview of Firming

Oracle Transportation Planning enables a planner to firm trips and continuous moves in order to maintain them in a desired state.

Oracle Transportation Planning captures information from the transportation execution system through a snapshot process. See 'Data Snapshot, page 8-1, for more information on this process. After running a transportation plan and making manual changes to the plan output, a planner can firm and release trips and continuous moves. The system then recognizes these trips and continuous moves as "*pegged*" and maintains them in the desired state through any re-optimization of the plan.

The following sections describe the different firm statuses and their effects on related trips and deliveries.

### Firm Statuses

In Oracle Transportation Planning, trips, deliveries, and continuous moves can have various firm statuses:

- Trips can be Not Firm, Routing Firm, or Routing and Contents Firm. The planner can specify the firm status for a trip on the trip Details window.

- Not Firm indicates that neither the contents nor the itinerary of the trip are firmed. You can change any trip attributes and can add or remove deliveries to or from the trip.
  - Routing Firm indicates that only the itinerary and schedule of the vehicle are firmed. You cannot change the trip routing or timing, but can add or remove deliveries to or from the trip.
  - Routing and Contents Firm indicates that both the itinerary and schedule of the vehicle and its deliveries are firmed. You cannot change either the trip's itinerary and schedule or the deliveries on it.
- Continuous moves can be Firm or Not Firm. The planner can specify the firm status for a continuous move on the Continuous Move Details screen. Firming a continuous move also firms the trips that constitute the continuous move. You cannot add or remove trips to or from a firmed continuous move.
  - Deliveries can be Not Firm, Contents Firm, or Routing and Contents Firm. In Oracle Transportation Planning, you cannot directly change the firm status of a delivery. A delivery inherits its firm status from the firm status of the trip or trips to which it is assigned or retains the firm status in which it was captured from the transportation execution system.
    - Not Firm indicates that neither the composition nor the itinerary of the delivery is firmed. You can add or remove delivery lines to or from the delivery. You can assign the delivery to or unassign the delivery from any trip.
    - Contents Firm indicates that only the composition of a delivery is firmed. You cannot add or remove delivery lines to or from the delivery. You can assign or unassign the delivery itself to or from any trip.
    - Routing and Contents Firm indicates that both the itinerary and the composition of the delivery are firmed. You cannot add or remove delivery lines, unassign the delivery from any of the trips it is on, or assign it to any other trip.

## Effects of Firm Statuses

Firm statuses have the following effects.

1. For a trip to be Routing and Contents Firm, the deliveries on it must also be Routing and Contents Firm. This means that the itineraries of the deliveries are set and held.
2. For a delivery to be Routing and Contents Firm, all the trips in its itinerary must be firmed. These trips can be either Routing Firm or Routing and Contents Firm. Note that the firming of one delivery does not require that other deliveries sharing

Routing Firm vehicle trips with it also be firmed.

3. Rules 1 and 2, together, imply that for a trip to be Routing and Contents Firm, all the trips that share deliveries with it must also be at least Routing Firm.
4. If a continuous move is Firm, then all the trips in the continuous move must be at least Routing Firm. If any of the trips in a continuous move is not firm, then firming the continuous move makes all such trips Routing Firm. However, if any of the trips on the continuous move were already Routing Firm or Routing and Contents Firm, then firming the continuous move does not change the status of such trips.

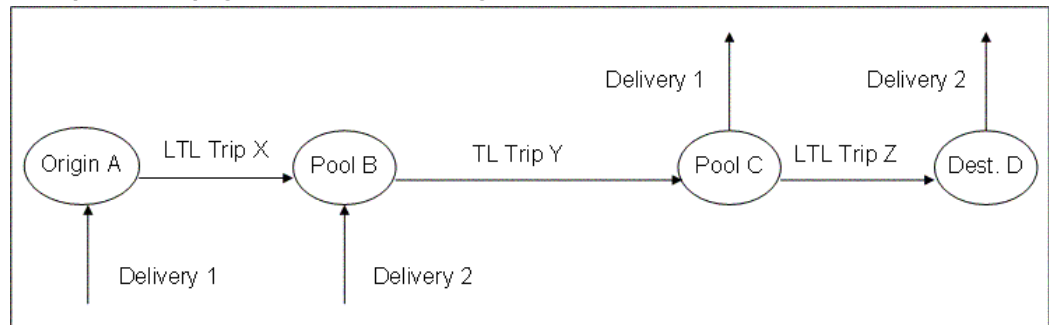
## Illustration of Propagation of Firming

The following sections provide examples that illustrate the propagation of firming among trips, deliveries, and continuous moves.

### Firming Trips and Deliveries

The following example illustrates the effect of firming a trip and its propagation to related trips.

#### **Example for Propagation Effect of Firming**



'Example for Propagation Effect of Firming, page 9-3 illustrates the example scenario. Less-than-truckload trip X carries Delivery 1 from Origin A to pool point B. At B, Delivery 1 consolidates with Delivery 2 and the consolidated load travels to pool point C on truckload trip Y. The load is deconsolidated at pool point C, which is also the destination for delivery D1. Delivery 2 continues to its destination D by less-than-truckload trip Z.

Trips X and Y constitute the itinerary of Delivery 1 and Trips Y and Z constitute the itinerary of Delivery 2.

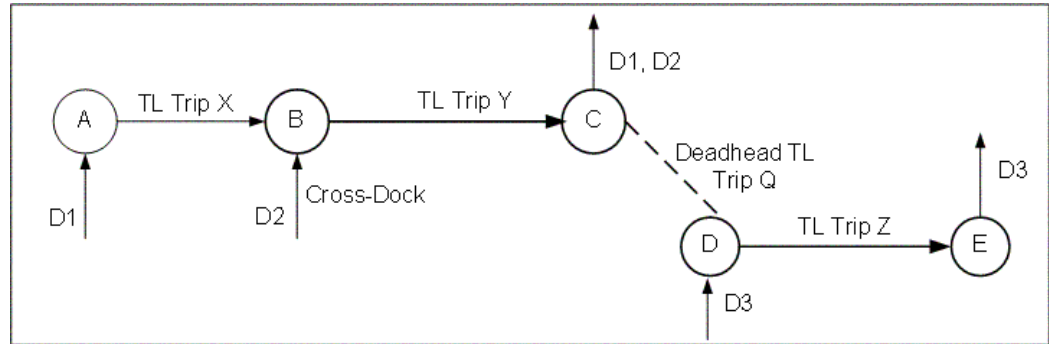
Based on the example, firming a trip propagates as described in the following table.

Action	Propagation
Make any of Trip X, Trip Y, or Trip Z Routing Firm	<ul style="list-style-type: none"> <li>• No impact on Delivery 1</li> <li>• No impact on Delivery 2</li> <li>• No impact on other Trips</li> </ul>
Make Trip X Routing and Contents Firm	<ul style="list-style-type: none"> <li>• Delivery 1 becomes Routing and Contents Firm</li> <li>• Trip Y becomes Routing Firm (if not already Routing Firm or Routing and Contents Firm)</li> <li>• No impact on Trip Z</li> <li>• No impact on Delivery 2</li> </ul>
Make Trip Y Routing and Contents Firm	<ul style="list-style-type: none"> <li>• Delivery 1 becomes Routing and Contents Firm</li> <li>• Delivery 2 becomes Routing and Contents Firm</li> <li>• Trip X becomes Routing Firm (if not already Routing Firm or Routing and Contents Firm)</li> <li>• Trip Y is at least Routing Firm (if not already Routing Firm or Routing and Contents Firm)</li> </ul>

## Firming Continuous Moves

The following example illustrates the impact of firming a continuous move or trips in a continuous move. This example assumes an initial state in which no that none of the trips or deliveries in the continuous move were previously firmied.

### Firming a Continuous Move



In 'Firming a Continuous Move, page 9-5, delivery D1 travels from origin A to cross-docking facility B by truckload trip X. At B, D1 is cross-docked from Trip X to Trip Y. Trip Y also carries delivery D2. Trip Y carries deliveries D1 and D2 to stop C, which is also the destination point for deliveries D1 and D2. The truck travels from C to stop D without any load (deadhead truckload trip Q). At stop D, the truck picks up delivery D3 and proceeds to stop E, which is the destination point for delivery D3. Trips Y, Q, and Z constitute a continuous move.

Based on the example, firming a continuous move or its trips propagates as described in the following table.

Action	Propagation
Make Trip X (not part of continuous move) Routing and Contents Firm	<ul style="list-style-type: none"> <li>• Delivery D1 becomes Routing and Contents Firm</li> <li>• Trip Y becomes Routing Firm (if not already Routing Firm or Routing and Contents Firm)</li> <li>• No impact on delivery D2</li> <li>• No impact on continuous move Y-Q-Z</li> <li>• No impact on delivery D3</li> </ul>
Make Trip Y Routing and Contents Firm	<ul style="list-style-type: none"> <li>• Deliveries D1 and D2 become Routing and Contents Firm</li> <li>• Trip X must be at least Routing Firm</li> <li>• No impact on continuous move Y-Q-Z</li> <li>• No impact on delivery D3</li> </ul>

Action	Propagation
Make Trip Z Routing and Contents Firm	<ul style="list-style-type: none"> <li>• Delivery D3 becomes Routing and Contents Firm</li> <li>• No impact on Trips Y and Q</li> <li>• No impact on deliveries D1 and D2</li> <li>• No impact on continuous move Y-Q-Z</li> </ul>
Make Trip Z Not Firm	<ul style="list-style-type: none"> <li>• Delivery D3 becomes Not Firm</li> <li>• Continuous move Y-Q-Z becomes Not Firm</li> </ul>
Make Continuous Move Y-Q-Z Not Firm	<ul style="list-style-type: none"> <li>• No propagation impact</li> </ul>
Make Continuous Move Y-Q-Z Firm	<ul style="list-style-type: none"> <li>• Trips Y, Q, and Z must be at least Routing Firm</li> <li>• No impact on deliveries D1, D2, or D3</li> <li>• No impact on Trip X</li> </ul> <p>Note: If any of the trips in the continuous move are Not Firm, then firming the continuous move makes all such trips Routing Firm. If any trip in the continuous move is already Routing Firm or Routing and Contents Firm, then firming the continuous move does not change the status of this trip. While firming a continuous move requires all trips in it to be firm, firming all the trips in a continuous move does not require the continuous move itself to be firm.</p>

## Changing Firm Statuses

In the course of manual planning, a planner can change the firm status on a trip. For example, the planner may change the firm status of a trip from Routing Firm to Routing and Contents Firm. After making additional modifications to the plan output, the planner may want to change the firm status of the trip back to Routing Firm.

The Firm Status, Released Date and Time, and Release Status fields are present on every Truckload Details, LTL Details, Parcel Details, and Continuous Move Details window. Refer to 'The Planner Workbench, page 11-1 for more information on accessing these windows.

The Firm Status field on these Details windows is an editable field. You can change the firm status of a trip in this window.

Released and Release Status are non-editable fields. The following apply to Released and Release Status fields.

- The Release Status represents the last known status of the trip in the transportation execution system. The system updates this field at the time of snapshot and after a release process from the planning system to the transportation execution system.
- If a trip is captured from the transportation execution system, then the Release Status field shows the firm status of the trip at the time of snapshot until such time as it is released back to the execution system. Until that time, the Released field remains blank.
- When the planner successfully releases a trip from the transportation planning system to the execution system, the system populates the Released field with the date and time at which the release process is completed for that trip (when the concurrent request for release is complete). If the release was unsuccessful, the system populates this field with the date and time of the attempted release.
- If you successfully release a trip, the system populates the Release Status field for that trip with the firm status of the released trip. The system updates the Release Status field when the trip's release process is completed (when the concurrent request for release is complete).

If the release process is unsuccessful, then the system populates the Released Status field with the value Failed.

Note that, in each of the above cases, the propagation of firming to related trips and deliveries takes place as described in 'Effects of Firm Statuses, page 9-2.

A planner can change the firm status subject to conditions discussed in the following sections.

#### **Scenario 1: Trip is Captured from the Transportation Execution System With a Routing Firm Status**

Since the trip has the Routing Firm status in the transportation execution system, the snapshot process captures this information in Oracle Transportation Planning. The values for Release Status, Released, and Firm Status are as follows.

- Release Status: Routing Firm
- Released: Blank

The blank Released field indicates that this trip was captured from Oracle Shipping Execution and has not been released from Oracle Transportation Planning back to the execution system.

**Note:** If the planner releases a Routing Firm trip that was captured from Oracle Shipping Execution, the planning system updates the Released field with the date and time of the release.

- Firm Status: Routing Firm

You can change the Firm status from Routing Firm to Routing and Contents Firm. If you change the status from Routing Firm to Routing and Contents Firm and do not subsequently re-release it in Routing and Contents Firm status, you can change the status back to Routing Firm. If you change it to Routing and Contents Firm and re-release it successfully, the trip must remain Routing and Contents Firm. In this case, the Release Status changes to Routing and Contents Firm.

You cannot change a trip with a Routing Firm Release Status into a Not Firm trip on the transportation planning system. To change such a trip to a Not Firm trip, you must change the firm status of the trip on the execution system and re-capture the data into the planning system through a new snapshot process.

#### **Scenario 2: Trip is Captured from the Transportation Execution System With a Routing and Contents Firm Status**

Since the trip has the Routing and Contents Firm status in the transportation execution system, the snapshot process captures this information in the planning system. The values for Release Status, Released, and Firm Status are as follows.

- Release Status: Routing and Contents Firm
- Released: Blank

The blank Released field indicates that this trip was captured from the transportation execution system and has not been released from the planning system back to the execution system.

- Firm Status: Routing and Contents Firm

In this case, you cannot change the firm status from Routing and Contents Firm to any other status on the transportation planning system. To change the firm status appearing in Oracle Transportation Planning, you must change the firm status in Oracle Shipping Execution and re-capture the data into the planning system through a new snapshot. Note that you cannot make any manual modifications to this trip in the planning system, but can release it again from the planning system back to the execution system. If you release such a trip from planning to execution, the system updates the Released field with the Date and Time of the release. If a conflict of information exists between the planning and the execution systems, then the release process for the trip will fail and the Release Status field shows the value Failed. The conflict of information between the planning and the execution system may be because of manual changes in the execution system that occurred after the data snapshot.

#### **Scenario 3: Continuous Move Captured from the Transportation Execution System**



### **with a Firm Status**

Since the continuous move has the Firm status in the execution system, the snapshot process captures this information in the planning system. The values for Release Status, Released (Date and Time), and Firm Status for the continuous move are as follows.

- Release Status: Firm
- Released: Blank

The blank Released field indicates that this continuous move was captured from the transportation execution system and has not been released from the planning system back to the transportation execution system.

- Firm Status: Firm

Note that you cannot change a continuous move with Release Status of Firm to a Not Firm continuous move. However, you can re-release a continuous move that was captured as Firm. In this case, the system updates the Released field to the date and time of release.

The values for Firm Status, Released, and Release Status for the constituent trips in the continuous move can be:

- Firm Status: Routing Firm or Routing and Contents Firm

Note: All trips in a firm continuous move are at least Routing Firm.

- Released: Blank

The blank field indicates that this trip was captured from Oracle Shipping Execution and has not been released from the planning system back to the execution system.

- Release Status: Routing Firm or Routing and Contents Firm

These trips are all snapshot from the source system along with the continuous move. For changing the Firm status on any of these trips, the same conditions apply as scenarios 1 and 2.

### **Scenario 4: Trips Built in the Transportation Planning System and Successfully Released to the Execution System**

For trips that Oracle Transportation Planning builds and releases successfully to the transportation execution system, the values for Firm Status, Released, and Release Status can be:

- Firm Status: Routing and Contents Firm, Routing Firm, or Not Firm
- Released: Date and time of release
- Release Status: Firm status as at the time of release: Routing Firm, Routing and

## Contents Firm, or Not Firm

The following rules apply to changing the Firm status of a successfully released trip:

- If you released the trip in a Not Firm status, then you can change the firm status to Routing Firm or Routing and Contents Firm. If you do not release the trip in the interim, you can later change the trip Firm status back to Not Firm.
- If you released the trip in a Routing Firm status, you can change the firm status to Routing and Contents Firm and, if not released in the interim, back to Routing Firm. You cannot change the status to Not Firm on the planning system. To achieve this, you need to change the firm status on the execution system and re-capture the data into the planning system through a new snapshot process.
- If you released the trip in Routing and Contents Firm status, you can no longer change the firm status on the planning system. To change the firm status, you need to do so on the execution system and re-capture the data into the planning system through a new snapshot. You cannot make any manual modifications to this trip in Oracle Transportation Planning because it now appears as Routing and Contents Firm in the transportation execution system, but you can release this trip again.

### **Scenario 5: Continuous Moves Built in the Transportation Planning System and Successfully Released to the Execution System**

For continuous moves that are built in Oracle Transportation Planning and successfully released to the transportation execution system, the values for Firm Status, Released, and Release Status can be:

- Firm Status: Firm or Not Firm
- Released: Date and time of release
- Release Status: Firm status as at the time of release: Firm or Not Firm

You cannot change a continuous move with Released status of Firm to Not Firm. The values for Firm Status, Released, and Release Status for the constituent trips in continuous move released as Firm can be:

- Firm Status: Routing Firm or Routing and Contents Firm  
Note: All trips in a Firm continuous move must at least be Routing Firm.
- Released: Date and time of release
- Release Status: Routing Firm or Routing and Contents Firm

### **Scenario 6: Trips or Continuous Moves Built in the Transportation Planning System and Not Yet Released**

For trips that are built in the transportation planning system and not yet released to the execution system, the values for Firm Status, Released, and Release Status can be:

- Firm Status: Routing and Contents Firm, Routing Firm, or Not Firm
- Released: Blank
- Release Status: Blank

In this case, you can change a trip's Firm status to any status. The same applies for trips in continuous moves that are built in the planning system and not yet released. You can change the Firm Status of the continuous move from Not Firm to Firm or from Firm to Not Firm. If the continuous move is Firm, then you need to change this status to Not Firm to be able to make the trips within the continuous move Not Firm. If the continuous move remains Firm, the trips in it can only be changed from Routing Firm to Routing and Contents Firm or from Routing and Contents Firm to Routing Firm.

**Scenario 7: Release Process Failed for the Trip or Continuous Move when Released from the Transportation Planning System to the Transportation Execution System**

If the release process for a trip fails, then the values for Firm Status, Released, and Release Status for the trip and all its related trips will be:

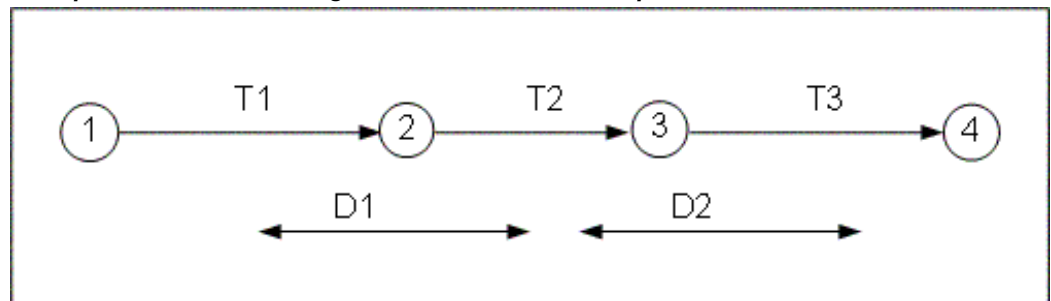
- Firm Status: Routing and Contents Firm, Routing Firm, or Not Firm as in the transportation planning system at the time of attempted release
- Released: Date and time of release of the most recent release attempt
- Release Status: Fail

In this case, you can change the Firm Status, make manual modifications, and try to release the trip again.

## Illustration of Effects of Firm Status Changes

The following example illustrates the propagation of firming or un-firming trips.

**Example for Effects of Changes in Firm Statuses on Trips**



'Example for Effects of Changes in Firm Statuses on Trips, page 9-11 illustrates the stops and trips considered in this example. 1, 2, 3, and 4 are locations. T1, T2, and T3 are trips servicing these locations. T1 carries delivery D1 from stop 1 to stop 2, T2 carries

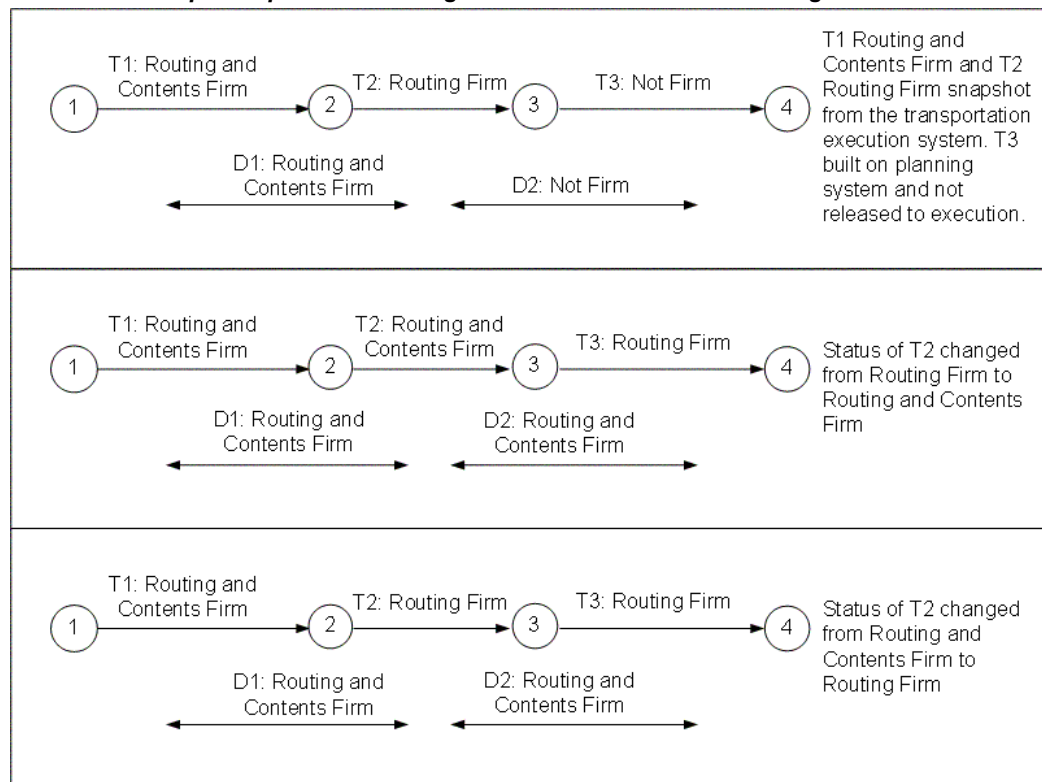
deliveries D1 and D2 from stop 2 to stop 3, and T3 carries delivery D2 from stop 3 to stop 4.

### Scenario 1: Trips Captured from the Transportation Execution System in Routing and Contents Firm and Routing Firm Statuses

For trips that are captured as Routing Firm from Oracle Shipping Execution, you can change the Firm status from Routing Firm to Routing and Contents Firm and back if you do not release the trip as Routing and Contents Firm in the interim. This is true also for trips that you successfully release from planning to execution as Routing Firm. All the deliveries that are firm on the Routing Firm trip remain firm.

'Scenario 1a: Trips Snapshot in Routing and Contents Firm and Routing Firm Statuses, page 9-12 illustrates the scenario in which a planner changes the firm status of trips captured from the transportation execution system.

#### Scenario 1a: Trips Snapshot in Routing and Contents Firm and Routing Firm Statuses



The transportation planning system captures T1 as Routing and Contents Firm and T2 as Routing Firm from the transportation execution system. Trip T3 is built by the transportation planning system and has not been released to execution. T1 being Routing and Contents Firm implies that delivery D1 is also Routing and Contents Firm which in turn requires that T2 is at least Routing Firm. Delivery D2 and trip T3 need not be firm and initially, they are not firm.

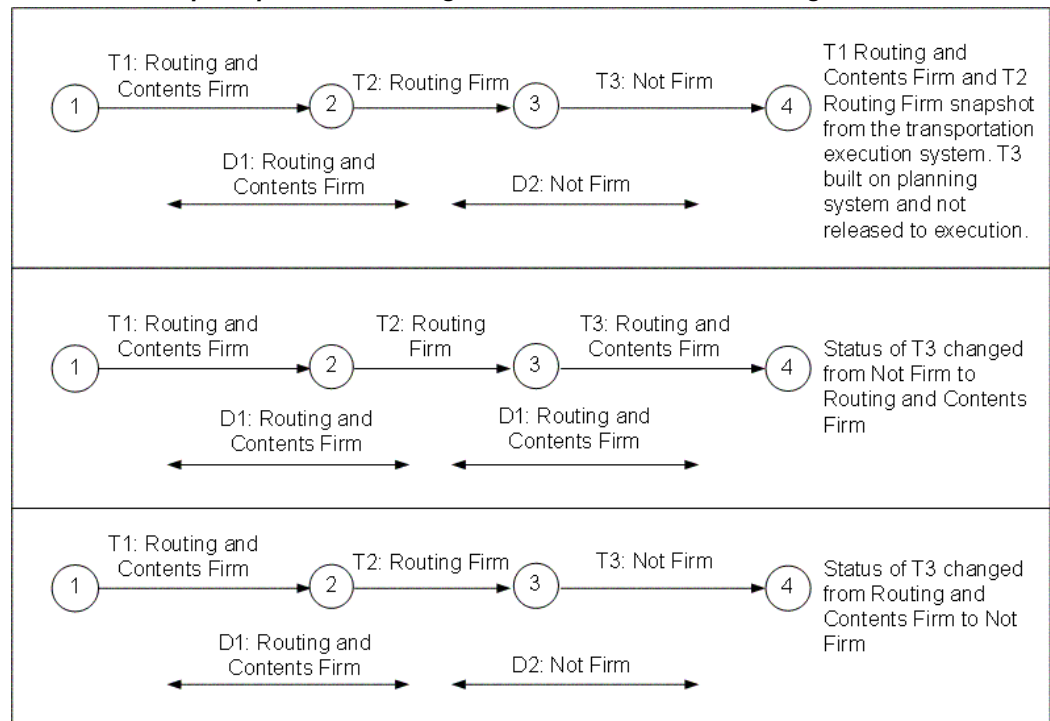
If you change the status of T2 from Routing Firm to Routing and Contents Firm,

Delivery D2 also becomes Routing and Contents Firm and trip T3 becomes Routing Firm.

If you now change the firm status of T2 from Routing and Contents Firm back to Routing Firm, D1 and D2 remain Routing and Contents Firm, while trip T3 remains Routing Firm.

'Scenario 1b: Trips Captured in Routing and Contents Firm and Routing Firm , page 9-13Statuses illustrates the scenario where you change the firm status of trip T3 built by the transportation planning system.

#### **Scenario 1b: Trips Captured in Routing and Contents Firm and Routing Firm Statuses**



The transportation planning system captures trip T1 as Routing and Contents Firm and T2 as Routing Firm from the transportation execution system. The transportation planning system builds trip T3 and has not released it to execution. T1 being Routing and Contents Firm requires that delivery D1 is also Routing and Contents Firm and this in turn requires that T2 is at least Routing Firm. Delivery D2 and trip T3 need not be firm, and in this case, they are not firm.

If you change the status of trip T3, built by Oracle Transportation Planning, from Not Firm to Routing and Contents Firm, delivery D2 becomes Routing and Contents Firm. Delivery D1 and trips T1 and T2 remain unchanged.

If you now change the firm status of T3 from Routing and Contents Firm back to Not Firm, delivery D2 also becomes Not Firm. Delivery D1 and trips T1 and T2 remain unchanged.

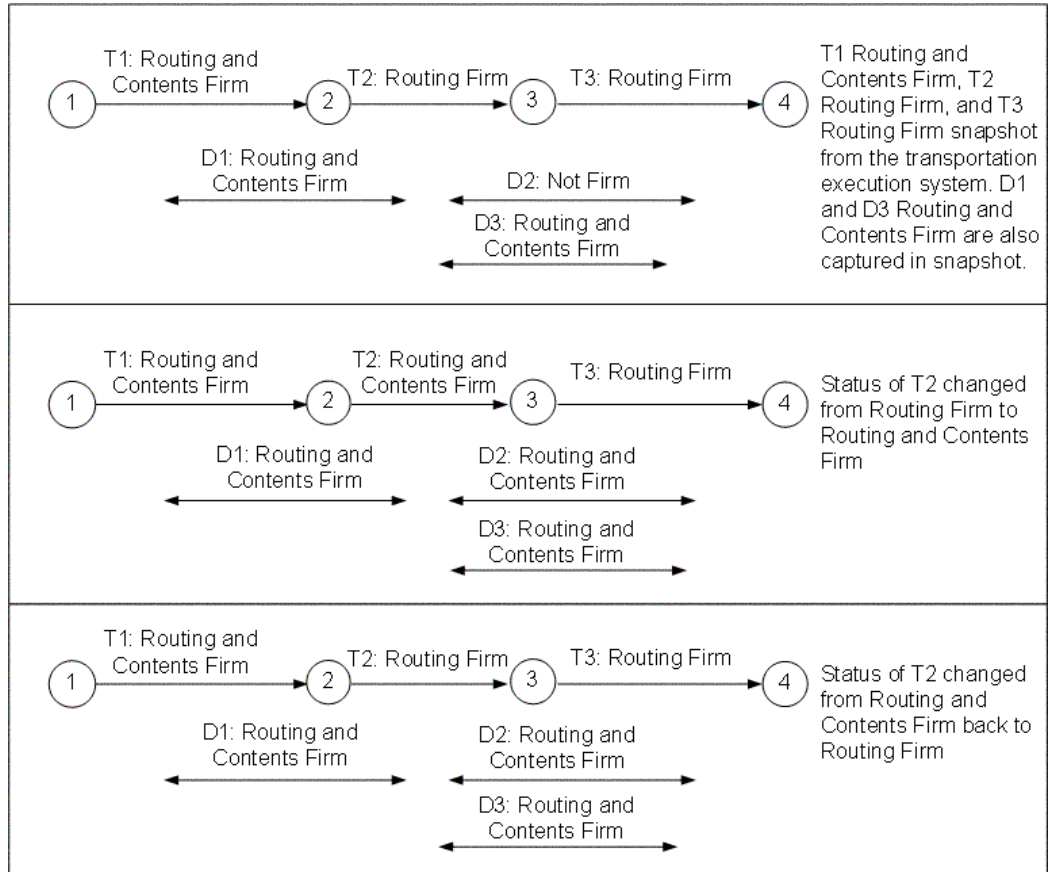
## **Scenario 2: Trips and Deliveries Captured from the Transportation Execution System in Firm Status**

In this scenario, consider an additional delivery D3, common to trips T2 and T3. If you manually firm delivery D3 as Routing and Contents Firm on the execution system, the snapshot process captures firm trips T1, T2, and T3 and firm deliveries D1 and D3. Note that, this time, T3 is not built by the transportation planning system.

Deliveries that are captured from the execution system as Routing and Contents Firm always remain in the Routing and Contents Firm status. You cannot change the Routing and Contents Firm status of such a delivery. For changing the firm status on such a trip, the rules described in the following examples apply. If you downgrade the firm status of a trip containing a firm delivery, for example, from Routing and Contents Firm to Routing Firm, then the rules apply only to deliveries that were not acquired as firm in the snapshot process.

'Scenario 2a: Trips and Deliveries Captured in Firm Status, page 9-12 illustrates the scenario where the transportation planning system captures firm trips and deliveries from the transportation execution system and then changes the firm status of such trips.

### Scenario 2a: Trips and Deliveries Captured in Firm Status



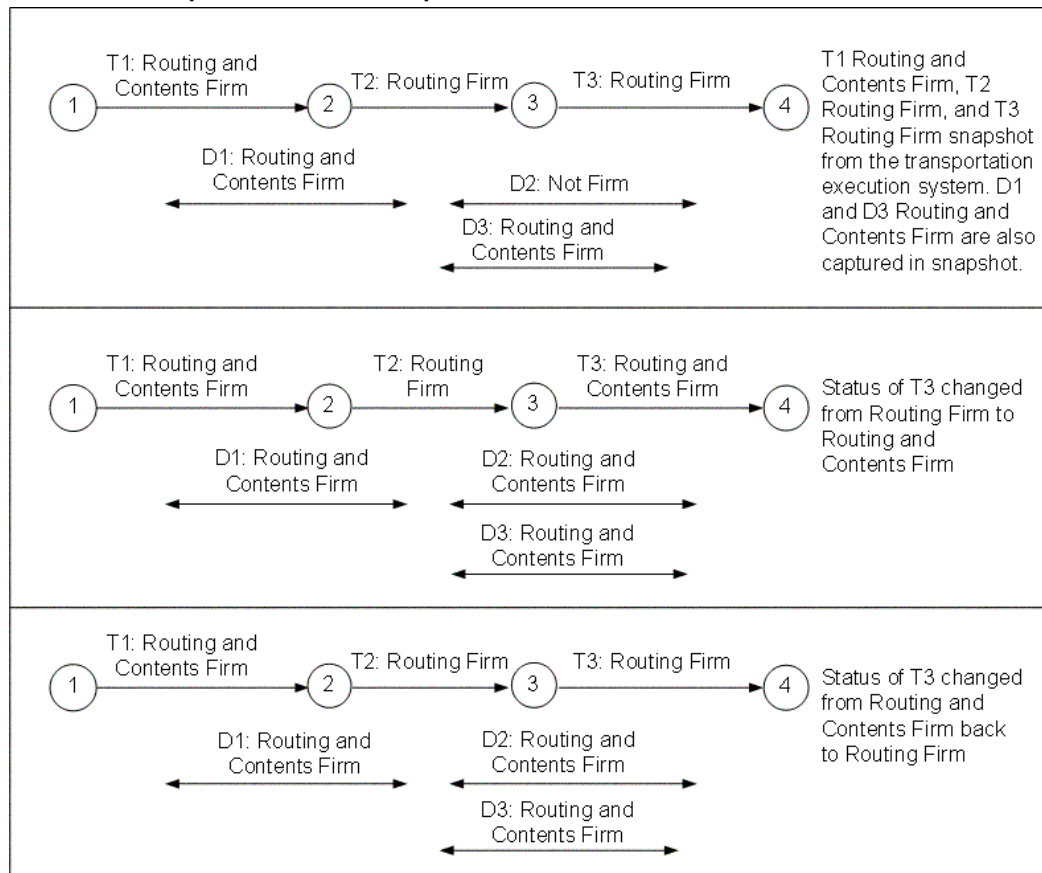
The transportation planning system captures trip T1 as Routing and Contents Firm and trips T2 and T3 as Routing Firm from the transportation execution system. Deliveries D1 and D3 are Routing and Contents Firm and are also captured in the snapshot process. Suppose that the transportation planning system creates delivery D2 and assigns it to trips T2 and T3.

If you change the status of trip T2 from Routing Firm to Routing and Contents Firm, the firm statuses of trips T1 and T3 and deliveries D1 and D3 remain unchanged. Delivery D2 changes from Not Firm to Routing and Contents Firm, as it travels on trip T2, which now has Routing and Contents Firm status.

If you then change the status of trip T2 from Routing and Contents Firm back to Routing Firm, delivery D2 remains Routing and Contents Firm. You cannot change the Routing and Contents Firm state of a trip or delivery that was captured from the execution system and so, the firm statuses of trips T1 and T3 and deliveries D1 and D3 remain the same.

The following figure illustrates the scenario where trip T3 is changed from Routing Firm to Routing and Contents Firm.

### Scenario 2b: Trips and Deliveries Captured in Firm Status



Changing trip T3 from Routing Firm to Routing and Contents Firm changes the Firm status of delivery D2 to Routing and Contents Firm. When trip T3 changes from Routing and Contents Firm back to Routing Firm, delivery D2 remains as Routing and Contents Firm. Other trips and deliveries experience no impact.

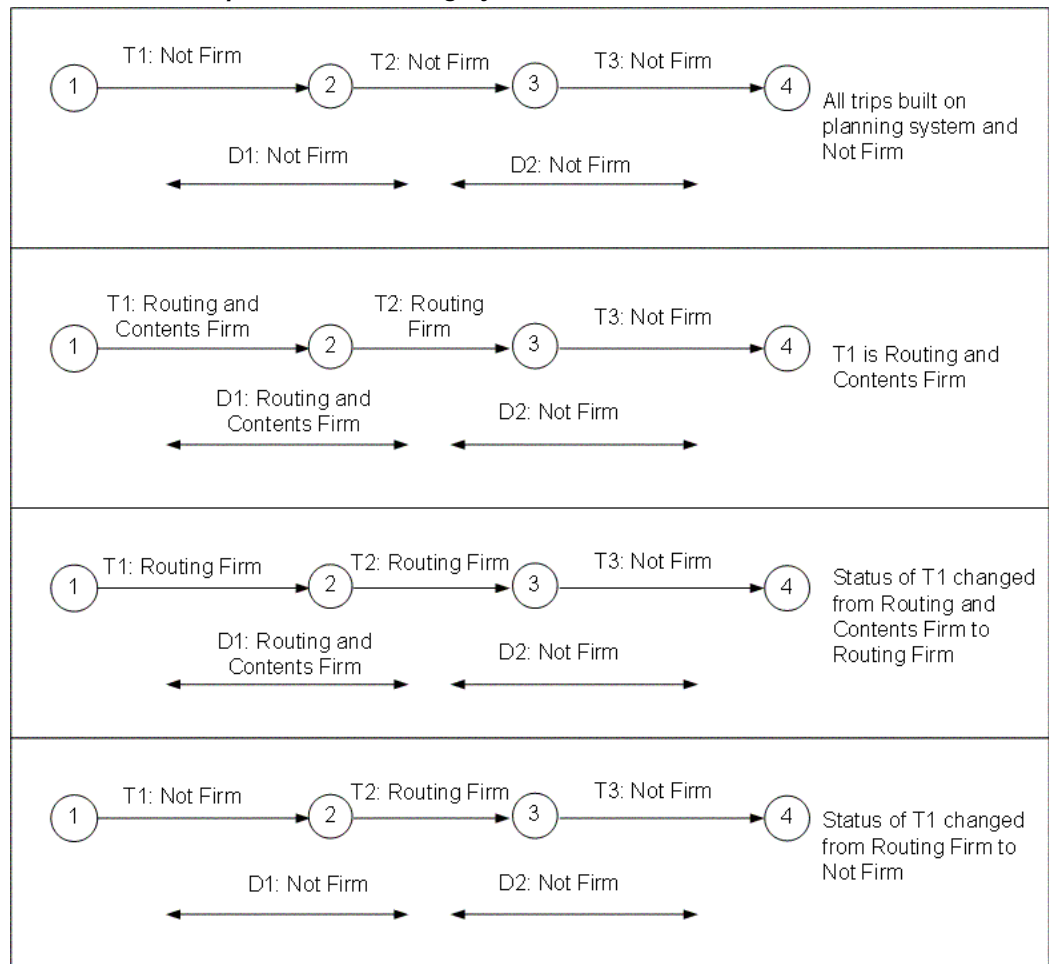
### Scenario 3: All Trips Built on the Planning System and Not Yet Released to Execution System

'Scenario 3a: All Trips Built on Planning System and Not Released to Execution, page 9-17 illustrates the impact of firming and changing the firm status of a trip, built by the transportation planning system and not yet released to the execution system.

T1, T2, and T3 are all Not Firm trips built in the transportation planning system.



**Scenario 3a: All Trips Built on Planning System and Not Released to Execution**



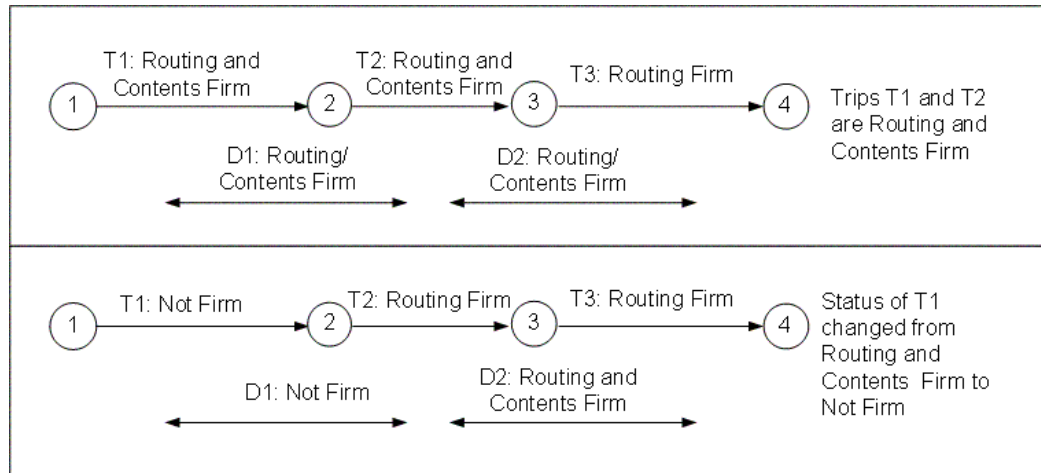
If trip T1 is made Routing and Contents Firm, delivery D1 becomes Routing and Contents firm, which requires that trip T2 is at least Routing Firm. Delivery D2 and trip T3 experience no impact.

If you now change T1 from Routing and Contents Firm to Routing Firm, delivery D1 remains Routing and Contents Firm. Firm statuses of trips T2 and T3 remain the same and delivery D2 remains in the Not Firm status.

If you now change the firm status of trip T1 from Routing Firm to Not Firm, delivery D1 becomes Not Firm, trip T2 remains as Routing Firm, and trip T3 and delivery D2 remains Not Firm.

'Scenario 3b: All Trips Built on Planning System and Not Released to Execution, page 9-18 illustrates a scenario where trips T1 and T2, built by the transportation planning system and not released to execution, are changed from Not Firm to Routing and Contents Firm.

**Scenario 3b: All Trips Built on Planning System and Not Released to Execution**



Deliveries D1 and D2 become Routing and Contents firm and trip T3 becomes Routing Firm.

If you now change the status of trip T1 from Routing and Contents Firm to Not Firm, delivery D1 becomes Not Firm and trip T2 becomes Routing Firm. Delivery D2 remains Routing and Contents Firm and trip T3 remains Routing Firm.

**Scenario 4. Handling of a Contents Firm Delivery**

Consider a delivery D4 that is common to trips T2 and T3. D4 is Contents Firm on the execution system and the snapshot process captures the firm statuses of T1 and T2 and firm delivery D1. The transportation planning system builds trip T3 and delivery D2.

When you make any trip Routing and Contents Firm, all the deliveries on that trip become Routing and Contents Firm. In addition, all the other trips that share those deliveries must be at least Routing Firm.

If you change the Routing and Contents Firm status to Routing Firm, then the deliveries on the trip remain Routing and Contents Firm and the related trips remain Routing Firm. Note that the deliveries captured in Contents Firm status also remain in the Routing and Contents Firm status.

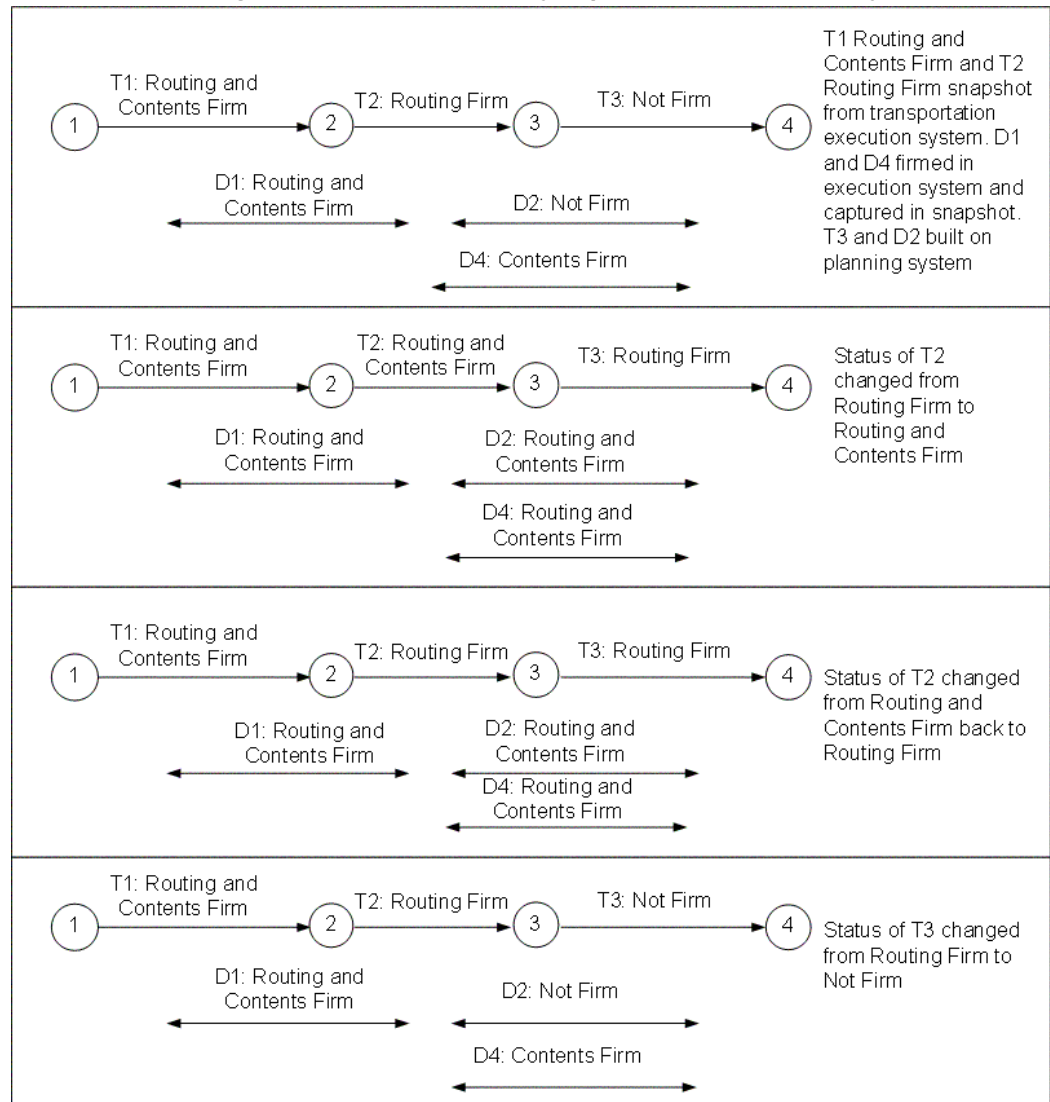
If the firm status of a trip is changed from Routing Firm to Not Firm, then all the deliveries on the trip become Not Firm except the deliveries that were originally captured in a Contents Firm status. Such deliveries return to Contents Firm status.

If you change the firm status of a trip from Routing and Contents Firm status to Not Firm, then all the deliveries on the trip become Not Firm unless they were captured as Contents Firm. Unless their Released status is Routing and Contents Firm, the related trips change to Routing Firm even if they were previously in a Routing and Contents Firm status. The deliveries that were earlier captured in Contents Firm status return to Contents Firm status.

"Scenario 4: Handling of a Content Firm Delivery Captured from Execution System",

page 9-19 illustrates these scenarios.

**Scenario 4: Handling of a Content Firm Delivery Captured from Execution System**



The transportation planning system captures Routing and Contents Firm trip T1 and Routing Firm trip T2 from the transportation execution system. On the execution system, delivery D1 is Routing and Contents Firm and delivery D4 is Contents Firm. The transportation planning system captures deliveries D1 and D4 in the snapshot process and builds trip T3 and delivery D2 in the planning process.

If you change the status of trip T2 from Routing Firm to Routing and Contents Firm, D2, which is built by the transportation planning system and was Not Firm, becomes Routing and Contents Firm. This requires trip T3 to be at least Routing Firm. Also, since D4 shares trip T2, which is now made Routing and Contents Firm, D4 changes from Contents Firm to Routing and Contents Firm. Delivery D1 and trip T1 experience no

impact.

If you now change the status of trip T2 from Routing and Contents Firm back to Routing Firm, deliveries D2 and D4 remain Routing and Contents Firm and trip T3 remains Routing Firm. Delivery D1 and trip T1 experience no impact.

If you change the status of trip T3 from Routing Firm to Not Firm, delivery D2 becomes Not Firm and delivery D4 returns to its previously captured Contents Firm status. Trip T2 remains Routing Firm. Trip T1 and delivery D1 experience no impact.

---

## Managing Exceptions

This chapter covers the following topics:

- Overview of Exception Management
- Exceptions Setup
- Audit Exceptions
- Plan Exceptions
- Related Exceptions
- Viewing Exceptions
- Understanding Exceptions
- Exception Messages
- System Guided Exception Resolution

### Overview of Exception Management

Oracle Transportation Planning generates exceptions that highlight situations of concern for a transportation planner. An exception is an indication that a potential problem or opportunity exists in the input or the output of the plan.

The planning system generates some exceptions before the plan run and identifies other exceptions after the plan run. The transportation planner has the option, based on these messages, to take corrective action or to be aware of the issues while finalizing the plan output.

### Key Features

Oracle Transportation Planning offers a comprehensive set of exceptions that are categorized into ten exception groups. Key exception management features in Oracle Transportation Planning include:

- Audit and Plan Exceptions: The Oracle Transportation Planning system enables you

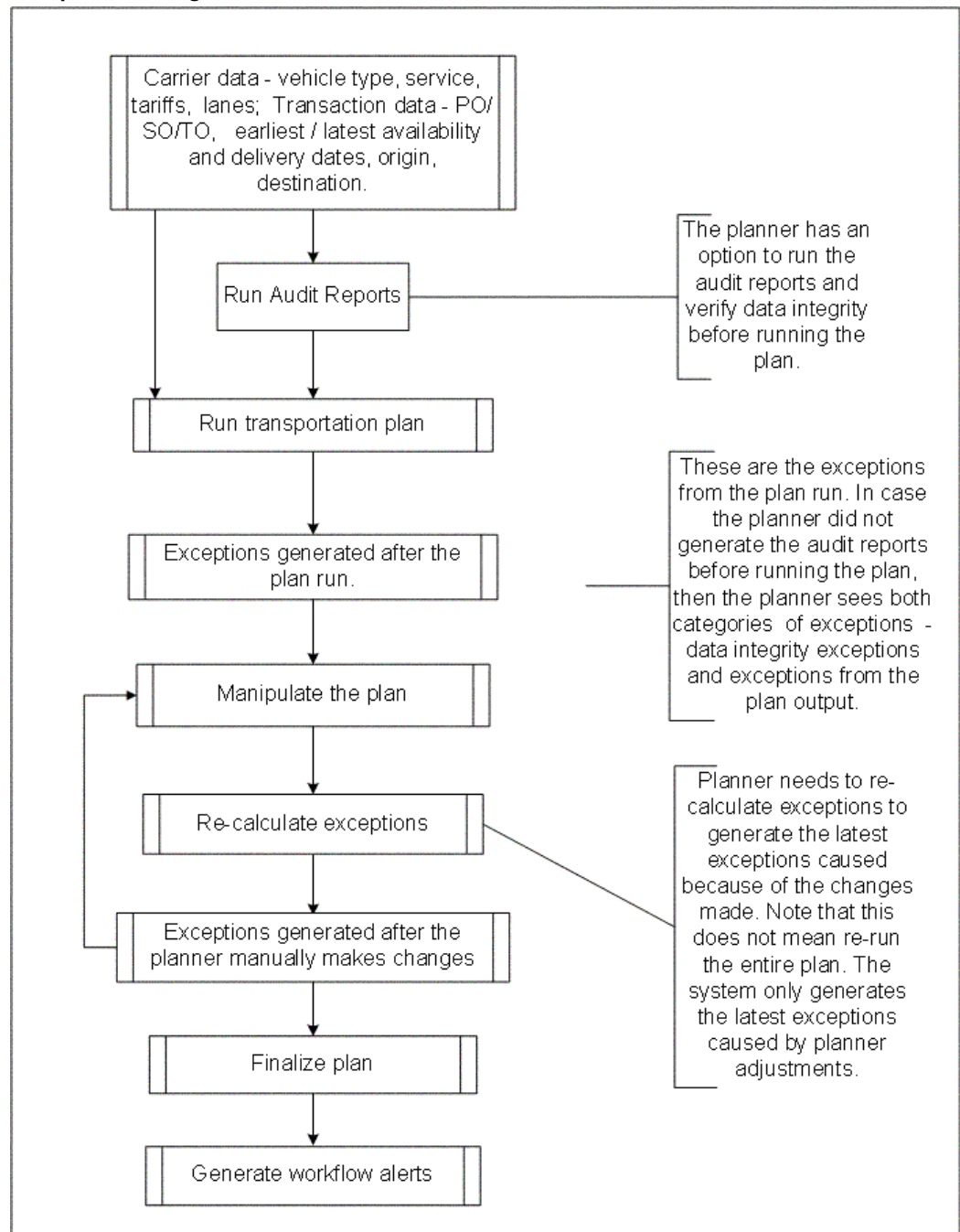
to identify exceptions in the input data before the plan run as well as exceptions in the plan output after the plan run.

- **Related Exceptions:** Oracle Transportation Planning supports the identification of related exceptions, that is, exceptions that have a causal effect in triggering other exceptions. For example, a planned late ship exception may be caused due to a past due order exception. This helps you to analyze, understand, and repair issues in the plan.
- **Thresholds:** You can specify thresholds for each exception type, so that you are not overwhelmed with the number of exceptions generated. For example, you may not want an exception to be generated when a truck exceeds specified capacity only by 1 unit but, rather, to be alerted only when the capacity is exceeded by at least 5%.
- **Statuses and Workflow:** For each exception type, you can define various statuses and related workflows associated with them. For example, you can define statuses such as Reviewed, Closed, and Escalated and associate various customized workflows with each status.
- **User-defined generation and display of exceptions:** You can specify the exceptions that the planning system must generate and the order in which you want the exceptions displayed. Note that you can also restrict this, system-wide, using global preferences.
- **Control impact of exceptions on release:** Oracle Transportation Planning enables you to specify the impact of each exception type on the release process by classifying it as Manual or Unrestricted.
- **System assisted exception resolution:** Oracle Transportation Planning offers tools that support the resolution of critical exceptions. For example, the exception resolution process for under-utilization of vehicle capacity leads you through a wizard approach that identifies opportunities to eliminate this exception.

## **Business Process**

'Exceptions Management Business Process Flow, page 10-3 illustrates the process involved in managing exceptions when using Oracle Transportation Planning. The text following the figure explains the illustrated business process flow.

### Exceptions Management Business Process Flow



1. The snapshot process captures the following data:

- Setup data, such as carriers, services, rates, and lanes.
- Transaction data, such as purchase orders, sales orders, earliest and latest ship

and delivery dates, origins, and destinations.

2. During the data snapshot, you can choose to run the Audit Reports and verify data integrity before running the plan.

An example where an exception is significant before the plan run is Missing Distance Data. The planning system triggers this exception when the origin-destination combination on a delivery line does not have data in the Oracle Transportation Execution distance table. This table stores distances and transit times for various origin-destination combinations. In such a case, you can check the address or zip code of the origin and destination facility on the transportation execution system and then correct the information in the buffer table.

3. After the data snapshot and corrective actions for data integrity based on the Audit Report, if generated, you can run the transportation plan.
4. During the plan run, Oracle Transportation Planning generates exceptions. If you did not generate audit reports before running the plan, then you get both categories of exceptions: data integrity exceptions (audit exceptions) and exceptions in the plan output (plan exceptions).
5. You can manipulate the plan based on identified exceptions. An example where a corrective action must be taken after the plan run is when a delivery line is not planned at all. In this case, the system identifies the unplanned delivery line as an exception and you can attempt to assign a mode, carrier, and service to the unplanned order.
6. After manipulating the plan, you can re-calculate exceptions to generate the latest exceptions caused by any changes made to the plan. Re-calculating the exceptions does not require re-running the entire plan. When you re-calculate exceptions, the system generates the latest exceptions caused by your manual adjustments; the planning engine does not re-optimize the plan.

For example, consider a truckload that is traveling through three stops. If you make a change to the Plan Departure date for the truck at stop 1 and then re-calculate exceptions, the engine re-determines the exceptions in the plan. This includes any exception that is caused by the change in the Plan Departure date at stop 1.

7. You can manipulate the plan again based on the latest exceptions or proceed to finalizing the plan. This is an iterative process.

An example where you may choose not to correct an exception after the plan run is the Overutilized Vehicle. In this case, you may decide that the level of over-utilization is acceptable.



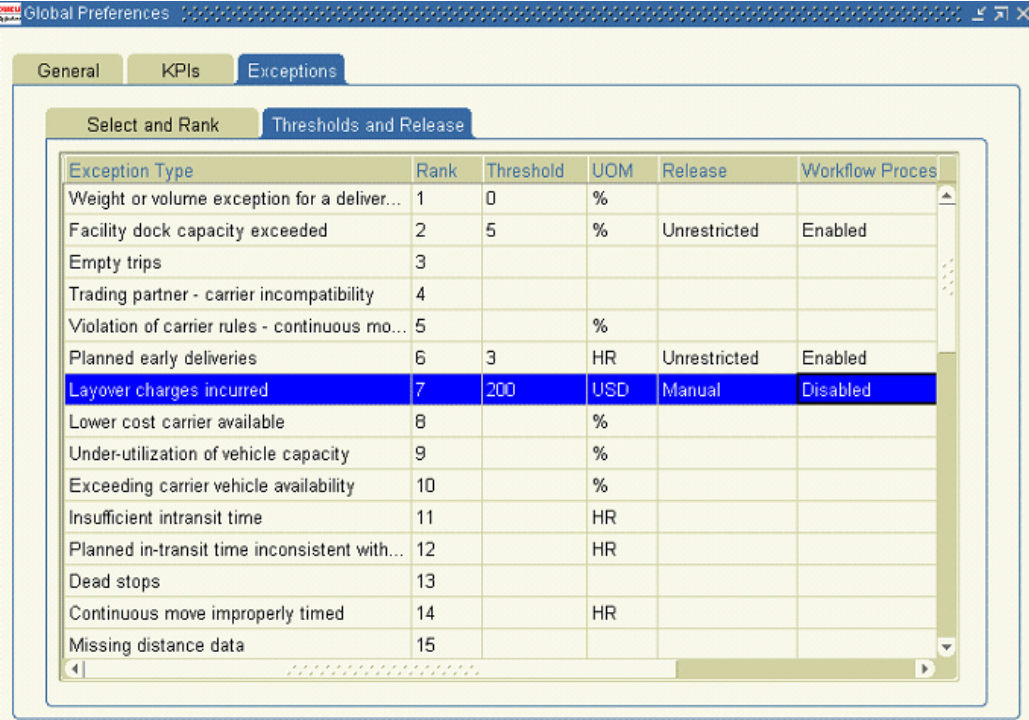
## Exceptions Setup

Exception settings enable you to decide on the balance between being adequately informed and being overwhelmed by information. You set up exceptions using the Global and User Preferences windows. See 'Step 24: Set Up Global Preferences, page 5-11 and 'Step 25: Set Up User Preferences, page 5-18 for more information.

### Exception Thresholds

The Transportation Planning Administrator can specify thresholds for each active exception type, so that the planner can manage the number of exceptions the system generates. For example, you may not want an exception to be generated when a truck exceeds specified capacity only by 1 unit but to be alerted only when the capacity is exceeded by at least 5%. These thresholds are specified globally in the Global Preferences window.

**Global Preferences Window: Thresholds and Release Tab in Exceptions Tab**



Exception Type	Rank	Threshold	UOM	Release	Workflow Process
Weight or volume exception for a deliver...	1	0	%		
Facility dock capacity exceeded	2	5	%	Unrestricted	Enabled
Empty trips	3				
Trading partner - carrier incompatibility	4				
Violation of carrier rules - continuous mo...	5		%		
Planned early deliveries	6	3	HR	Unrestricted	Enabled
Layover charges incurred	7	200	USD	Manual	Disabled
Lower cost carrier available	8		%		
Under-utilization of vehicle capacity	9		%		
Exceeding carrier vehicle availability	10		%		
Insufficient intransit time	11		HR		
Planned in-transit time inconsistent with...	12		HR		
Dead stops	13				
Continuous move improperly timed	14		HR		
Missing distance data	15				

You can specify threshold values for the following exception types:

Exception Group	Exception Type	Basis for Applying
-----------------	----------------	--------------------

Exception Group	Exception Type	Basis for Applying
Late and Early Exceptions	• Planned Late Delivery	Time
	• Planned Late Ship	
	• Planned Early Delivery	
	• Planned Early Ship	
	• Insufficient Transit Time	
	• Past Due Order	
Trip and Order Exceptions	• Carrier Rule Violation - Distance	Percentage
	• Carrier Rule Violation - Time	
	• Carrier Rule Violation - Continuous Move	
	• Hours of Service Violation	
Trip and Order Exceptions	• Carrier Rule Violation - Stops	Number
Trip and Order Exceptions	• Inconsistent Planned and Required Transit Times	Time
Carrier Exceptions	• Carrier Vehicle Availability Exceeded	Percentage
	• Carrier Commitment Underutilization	

Exception Group	Exception Type	Basis for Applying
Timing Exceptions	• Facility Calendar Violation	Time
	• Insufficient Stop Time	
	• Insufficient Connect Time	
	• Continuous Move Improperly Timed	
	• Ship Window Violating Facility Calendar	
	• Delivery Window Violating Facility Calendar	
	• Carrier Facility Appointment Violation	
Cost Exceptions	• Lower Cost Carrier Available	Percentage
Cost Exceptions	• Layover Charges Incurred	Currency Unit
Vehicle Exceptions	• Overutilized Vehicle	Percentage
	• Underutilized Vehicle	
Facility Exceptions	• Facility Dock Capacity Exceeded	Percentage
	• Facility Handling Capacity Exceeded	

Exception Group	Exception Type	Basis for Applying
Unplanned Delivery Lines	<ul style="list-style-type: none"> <li>• Infeasible Piece Dimension</li> <li>• Infeasible Piece Weight or Volume</li> <li>• Infeasible Delivery Line Weight or Volume</li> <li>• Infeasible Firm Delivery Weight or Volume</li> </ul>	Percentage

## Exception Statuses

Every exception has a status associated with it. Use the Transportation Planning Administrator responsibility to define exception statuses, define workflows, and assign workflows to each exception status for each exception type.

Generated and Closed are exception statuses that are seeded in the system. The Transportation Planning Administrator can define other exception statuses, such as Reviewed and Escalated, using the Exception Status menu in the Navigator.

When a planner first views the details of an exception in the Exception Details window after launching a plan, re-running exceptions, or re-optimizing a plan, the status of the exception is Generated. The Status field value is linked. Clicking the Status link opens a window on top of the existing Exceptions Details window with a list of exception statuses. You can select a different status and then click OK. This closes the window that shows the list of values and populates the status field with the new value.

## Exception Workflows

The Transportation Planning Administrator can assign workflows for each exception-exception status combination. For example, the workflow for a Vehicle Over-Utilization exception in a Generated status can be **Start - Notify User - Finish**. If the planner changes the status of this exception to Closed, then the workflow process can be **Start -Finish**.

Considering another example, the workflow for a late order exception in a Generated status can be **Start - Notify User - Notify Sales Representative - Finish**. If the planner changes the status of this exception to Escalate, then the workflow process can be **Start - Notify Planner's Manager - Notify Sales Manager - Finish**.

The only seeded workflow for all exception types and exception statuses is **Start - Notify User - Finish**. If the Transportation Planning Administrator does not specify a workflow for an exception-exception status combination, then the workflow for that

exception-exception status combination is **Start -Notify User-Finish** if the workflow is enabled.

You can control whether or not the workflow is triggered for each exception. The Transportation Planning Administrator can enable or disable workflows related to each exception. This is accomplished by selecting Enabled or Disabled in the Workflow field on the Thresholds and Release subtab of the Exceptions tab in the Global Preferences window. For example, the Transportation Planning Administrator can disable all the workflows for the exception type Empty Trip. This disables the generation of notifications for all the exception statuses of this exception type.

When you launch a plan, re-run exceptions, or re-optimize a plan, the system deletes all the previously existing workflow notifications for that plan and refreshes the work list with the latest workflow notifications.

### **Impact of Exception Settings on Release Process**

You can specify the impact of each exception type on the release process by classifying it as Unrestricted or Manual.

1. **Manual:** A user can only manually release trips that have any exceptions of exception types in this status. You cannot auto-release such trips.
2. **Unrestricted:** A user can auto-release as well as manually release trips that only have exceptions of exception types in Unrestricted status.

In some cases, exception settings may have changed after the plan run. When you try to release trips from an earlier plan, but with new exception settings, the release process considers the latest exception settings.

## **Audit Exceptions**

The transportation planning system can alert the planner about situations where user intervention is required before a plan run. The Audit Report is an optional step that reduces the impact of data entry errors and identifies infeasible situations in advance, so that the planner can make necessary adjustments to the input data. This also reduces improper processing by the planning engine.

Oracle Transportation Planning tracks the following audit exceptions:

1. Missing Latitude and Longitude
2. Missing Distance Data
3. Delivery Lines with Zero Quantity
4. Infeasible Piece Dimension
5. Infeasible Piece Weight or Volume

6. Infeasible Delivery Line Weight or Volume
7. Infeasible Firm Delivery Weight or Volume
8. Insufficient Transit Time
9. Past Due Orders
10. Ship Window Violating Facility Calendar
11. Delivery Window Violating Facility Calendar

If you do not correct the audit report exceptions before the transportation plan run, the planning engine may generate additional exceptions caused by the input data issues.

### **To generate Audit Reports:**

1. Navigate to the Planner Workbench using the Transportation Planner responsibility.
2. On the navigation tree on the Planner Workbench, select the plan for which you want to run the Audit Report.
3. From the Tools menu, select Run Audits. You see a notification saying that a request has been placed to calculate audit exceptions. You can monitor the status of the request using the Requests window. You can access this window by selecting Requests from the View menu.

You can also run Audit Reports from the Launch Transportation Planning Process window. You can access this window from the Transportation Planner Navigator using the Launch Plan menu option or by selecting Launch Plan from the Plan menu on the Planner Workbench. You need to set the Run Audit Reports parameter to Yes for audit exceptions to be generated. See 'Launching a Plan, page 6-44 for more information.

When the concurrent request is completed, you can view the Audit Exceptions Summary on the Exceptions and Recommendations window. To access the Exceptions and Recommendations window, select the plan node on the navigation tree and then right-click and select Exceptions.

Note that if you have already run a plan and then launch the Audit Reports concurrent request, the system removes all the previously generated exceptions and displays only the audit exceptions. If you select the plan node on the Planner Workbench navigation tree and then right-click and select Exceptions, the Exceptions and Recommendations window shows the audit exceptions.

## Plan Exceptions

The Oracle Transportation Planning system generates exceptions for the transportation plan that identify situations you can address to improve plan quality. As far as possible, the planning engine does not violate any hard constraints that can lead to exception conditions. The planning engine, however, may choose to violate soft constraints when the benefits exceed any associated penalty. In the event that the system violates hard or soft constraints, exceptions are generated to alert the user. See 'Specifying Constraints and Penalties, page 6-24 for more information. Also, the system may generate exceptions when the planner manually adjusts the plan output and violates a constraint in the process. For example, a shipment that is on time may be delayed if the planner moves the shipment from an earlier trip to a later trip.

You have the option either to take corrective action and resolve exceptions or simply to be aware of the discrepancies while finalizing the plan output.

The following table lists the exceptions that the system may generate when you run a plan.

Exception Group	Exception Type
Late and Early Exceptions	<ul style="list-style-type: none"><li>Planned Late Delivery</li><li>Planned Early Delivery</li><li>Planned Late Ship</li><li>Planned Early Ship</li><li>Past Due Order</li><li>Insufficient Transit Time</li></ul>

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Trip and Order Exceptions	<ul style="list-style-type: none"> <li>• Carrier Rule Violation <ul style="list-style-type: none"> <li>• Carrier Rule Violation - Distance</li> <li>• Carrier Rule Violation - Time</li> <li>• Carrier Rule Violation - Stops</li> <li>• Carrier Rule Violation - Interspersed Pickups and Drop-Off</li> <li>• Carrier Rule Violation - Continuous Move</li> </ul> </li> <li>• Empty Trips</li> <li>• Dead Stops</li> <li>• Inconsistent Planned and Required Transit Times</li> <li>• Hours of Service Violation</li> <li>• Delivery Lines with Zero Quantity</li> <li>• Ship Set Violation</li> <li>• Arrival Set Violation</li> <li>• Item-Mode Incompatibility</li> <li>• Item-Carrier Incompatibility</li> </ul>
Carrier Exceptions	<ul style="list-style-type: none"> <li>• Carrier Vehicle Availability Exceeded</li> <li>• Carrier Commitment Underutilization</li> </ul>

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Timing Exceptions	<ul style="list-style-type: none"><li>• Facility Calendar Violation</li><li>• Insufficient Stop Time</li><li>• Insufficient Connect Time</li><li>• Continuous Move Improperly Timed</li><li>• Ship Window Violating Facility Calendar</li><li>• Delivery Window Violating Facility Calendar</li><li>• Carrier Facility Appointment Violation</li></ul>
Cost Exceptions	<ul style="list-style-type: none"><li>• Lower Cost Carrier Available</li><li>• Layover Charges Incurred</li></ul>
Vehicle Exceptions	<ul style="list-style-type: none"><li>• Overutilized Vehicle</li><li>• Underutilized Vehicle</li><li>• Item-Vehicle Incompatibility</li></ul>
Facility Exceptions	<ul style="list-style-type: none"><li>• Facility Dock Capacity Exceeded</li><li>• Facility Handling Capacity Exceeded</li><li>• Facility - Vehicle Incompatibility</li><li>• Pool Facility - Carrier Incompatibility</li><li>• Missing Latitude and Longitude</li><li>• Facility - Item Incompatibility</li><li>• Facility - Mode Incompatibility</li><li>• Facility - Facility Incompatibility</li><li>• Unused Drop Trailer Opportunity</li></ul>

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Trading Partner Exceptions	<ul style="list-style-type: none"> <li>• Trading Partner - Carrier Incompatibility</li> <li>• Customer - Customer Incompatibility</li> </ul>
Unplanned Deliveries	<ul style="list-style-type: none"> <li>• Unassigned Deliveries</li> </ul>
Unplanned Delivery Lines	<ul style="list-style-type: none"> <li>• Missing Distance Data</li> <li>• Infeasible Delivery Line Weight or Volume</li> <li>• Infeasible Firm Delivery Weight or Volume</li> <li>• Infeasible Piece Weight or Volume</li> <li>• Infeasible Piece Dimension</li> </ul>

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Plan exceptions are generated whenever you run a plan. For a plan that has already been run, you can generate the current exceptions without re-running the plan.

For information on launching plans, see 'Launching a Plan, page 6-44.

#### **To generate plan exceptions for a plan that has already been run:**

1. Navigate to the Planner Workbench using the Transportation Planner responsibility.
2. On the navigation tree on the Planner Workbench, select the plan that you want to run.
3. From the Plan menu, select Re-Calculate Exceptions.

After you launch the request, you can monitor its status in the Requests window. You can access the Requests window by selecting Requests from the View menu.

When the concurrent request is completed, you can view the plan exceptions on the Exceptions and Recommendations window. To access the Exceptions and Recommendations window, select the plan node on the Planner Workbench navigation tree and then right-click and select Exceptions.

Note that if a plan has been run previously and you launch it again or re-calculate exceptions, the system removes all the previously generated exceptions. If you now right-click the plan node on the Planner Workbench tree and select the Exceptions option, the Exceptions and Recommendations window shows only the newly generated exceptions.

## Related Exceptions

Some exceptions can have causal or related exceptions. For example, a Planned late delivery exception is caused when a delivery is delivered later than the specified available to ship date. The delivery may already have been a past due order, though, and therefore impossible not to deliver late. The order being past due directly relates to the fact that the order will be delivered late. In this case, you see a related exception for past due order on the planned late delivery exception.

The following related exceptions exist in the Oracle Transportation Planning system. Note that the Related Exceptions button on the Exception Details window is enabled only if the exception you are considering has any related exception.

Exception Group	Exception Type	Related Exceptions
Late and Early Exceptions	Planned Late Delivery	<ul style="list-style-type: none"><li>• Past Due Order</li><li>• Insufficient Transit Time</li></ul>
Late and Early Exceptions	Planned Late Ship	<ul style="list-style-type: none"><li>• Past Due Order</li></ul>
Late and Early Exceptions	Planned Early Ship	<ul style="list-style-type: none"><li>• Insufficient Transit Time</li></ul>
Trip and Order Exceptions	Inconsistent Planned and Required Transit Times	<ul style="list-style-type: none"><li>• Insufficient Transit Time</li></ul>
Timing Exceptions	Facility Calendar Violation	<ul style="list-style-type: none"><li>• Ship Window Violating Facility Calendar</li><li>• Delivery Window Violating Facility Calendar</li></ul>
Unplanned delivery lines	Infeasible Delivery Line Weight or Volume	Infeasible Piece Weight or Volume

## Viewing Exceptions

Use the following procedure to view plan exceptions.

**To view exceptions:**

You can view plan exceptions in one of the following ways:

1. On the Planner Workbench, select a plan on the navigation tree or a subordinate node in the plan for which exceptions are enabled. Then right-click and select Exceptions.
2. On the Planner Workbench, select a plan on the navigation tree or a subordinate node in the plan for which exceptions are enabled. Then select View Exceptions from the Actions menu.

Either of these two actions opens the Exceptions and Recommendations window.

## Exceptions and Recommendations Window

Exceptions and Recommendations (DG-SC-4B)

**Summary**

Exception Type	Exception Group	Count	Rank
<b>Trading partner - carrier incompatibility</b>	Trading partner exceptions	2	32
Missing latitude and longitude coordinates	Facility exceptions	2	31
Facility dock capacity exceeded	Facility exceptions	1	27
Under-utilization of vehicle capacity	Vehicle exceptions	7	26
Lower cost carrier available	Cost exceptions	1	23
Violation of facility calendar for delivery	Timing exceptions	6	22
Violation of facility calendar for pick-up	Timing exceptions	4	21
Violation of facility calendar	Timing exceptions	29	17
Delivery lines with zero pieces, cube or w...	Trip and order exceptions	1	15
Violation of carrier rules - time	Trip and order exceptions	3	13
Violation of hours of service regulations	Trip and order exceptions	8	11
Violation of carrier rules - distance	Trip and order exceptions	3	7
Planned late ships	Early and late exceptions	4	3
Planned early deliveries	Early and late exceptions	2	2

**Recommendations**

Group	Auto Released	Released	Release Failed	Flagged Fo...	Unreleased
<b>Parcels</b>	0	0	0	0	0
Continuous Mov...	0	0	0	0	0
LTLs	0	0	0	0	7
TLs	0	0	0	0	11

Find Release Candidates Details

## Exceptions and Recommendations Window

The Exceptions and Recommendations window Summary region displays summary exception information generated by the most recent Launch Plan process or Re-run Exceptions process.

The Exceptions Summary region shows the counts for the various exception types of different exception groups. For details of information displayed in the Recommendations block, refer to 'Releasing Plan Output for Execution, page 16-1.

By default, the system displays the exception types in the Summary region in ascending order of their ranks. The ranks are specified in the User Preferences window. Note that all the columns on the Exceptions and Recommendations window, Exception Type, Exception Group, Count, and Rank, are sortable.

To view the details of an exception type, select the exception type using the selector on

the left of the row and then click Details. You can also view Exception Details by clicking the exception type link.

### Exception Details Window for Under-utilization of Vehicle Capacity Exception

Exception Details (Under-utilization of vehicle capacity)

Under-utilization of vehicle capacity

Trip	Weight (Gross)	Weight Capacity	Cube	Cube Capacity	Pallets	Pallet Capacity	Carrier	Origin City
21	28,000	42,000	2,800	3,200	0	48	RSTL1	Richmond
23	29,000	42,000	2,900	3,200	0	48	RSTL1	Richmond
20	30,000	42,000	3,000	3,200	0	48	RSTL1	Richmond
22	33,000	44,000	3,300	3,500	0	52	RSTL1	Richmond

Resolve Trip Details

—Trip Stop and Legs—

Stops Legs

Stop	Company	Facility	City	State	Arrival	Departure
1	My Company	RS-Richmond...	Richmond	VA	04-JUL-2007 08:00 EDT	04-JUL-2007 08:48 EDT
2	RS-Cust	RS-Cust_11588	Seattle	WA	08-JUL-2007 13:56 PDT	08-JUL-2007 14:44 PDT

Stop Details

—Candidate Shipments— Utilization%

Select a trip/order to assign to the underutilized trip. Select Analyze to review cost impact and exceptions or Add to Trip to implement the change.

Trip/Delivery	Mode	Origin Company	Origin City	Origin State	Destination Company	Destination City
---------------	------	----------------	-------------	--------------	---------------------	------------------

Select All Map Add to Map Add to Trip Details Analyze

## Exception Details Window

The Exception Details window displays information about each exception of the selected exception type. When you select an exception in the upper block of the window, the lower block of the window displays information corresponding to the selected exception.

Note that some of the fields on the Exception Details window may be hidden. To view these fields, right-click any column header and select the Show Field option. This produces a list of available fields from which you can select the desired one. The threshold value field is one such field.

## Buttons on the Exception Details Window

On the Exception Details window, you can obtain additional information about certain exceptions using buttons available on the window. The buttons that appear on the Exception Details windows are unique to an exception type.

For example, if you are viewing the details of the exception type Under-Utilization of Vehicle Capacity, then the Exception Details window displays the Resolve and Trip

Details buttons. See 'System Guided Exception Resolution, page 10-69 for more information.

You can use the Related Exceptions button on some Exception Details windows to obtain further cause and effect information. For example: A planned early ship exception may be the result of insufficient transit time.

The Related Exceptions window is similar to the Exceptions and Recommendations window. However, the Related Exceptions window does not display the Recommendations block.

## Understanding Exceptions

This section explains the circumstances that trigger each exception type, the actions that are possible in relation to these exceptions, and the calculation of key exception attributes where relevant.

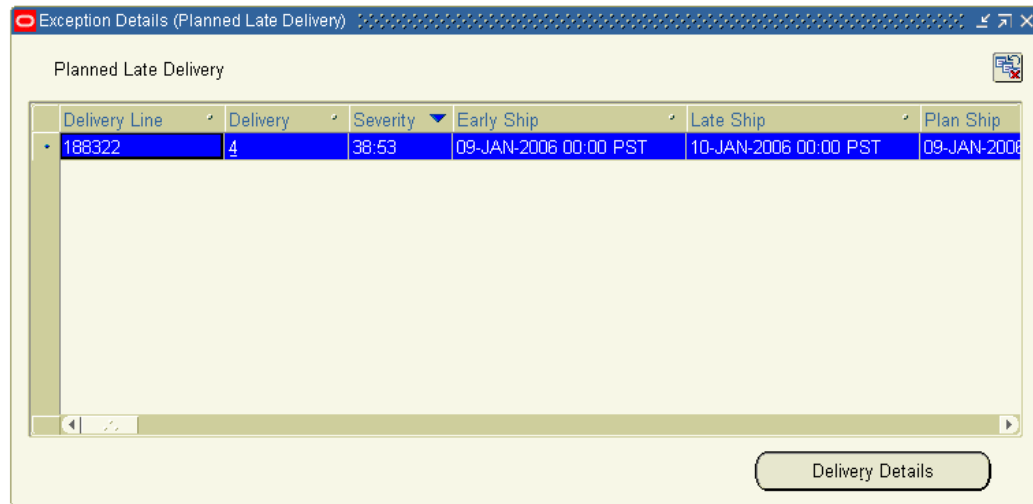
### Late and Early Exceptions

#### Planned Late Delivery

The planning system generates the Planned Late Delivery exception when Plan trip stop departure from delivery's destination is later than the Latest delivery date on the delivery line.

To resolve this exception, you may change the departure and arrival dates and times of the trip carrying the delivery. Note that, if you change only the Plan Arrival Date of a trip stop without correspondingly adjusting the departure and arrival dates and times at other stops in the trip, then an inconsistency may exist between the planned transit time and the actual transit time required. In this case, the planning engine generates a new exception for Inconsistent Planned and Required Transit Times.

### Exception Details (Planned Late Delivery) Window



Delivery Line	Delivery	Severity	Early Ship	Late Ship	Plan Ship
188322	4	38.53	09-JAN-2006 00:00 PST	10-JAN-2006 00:00 PST	09-JAN-2006

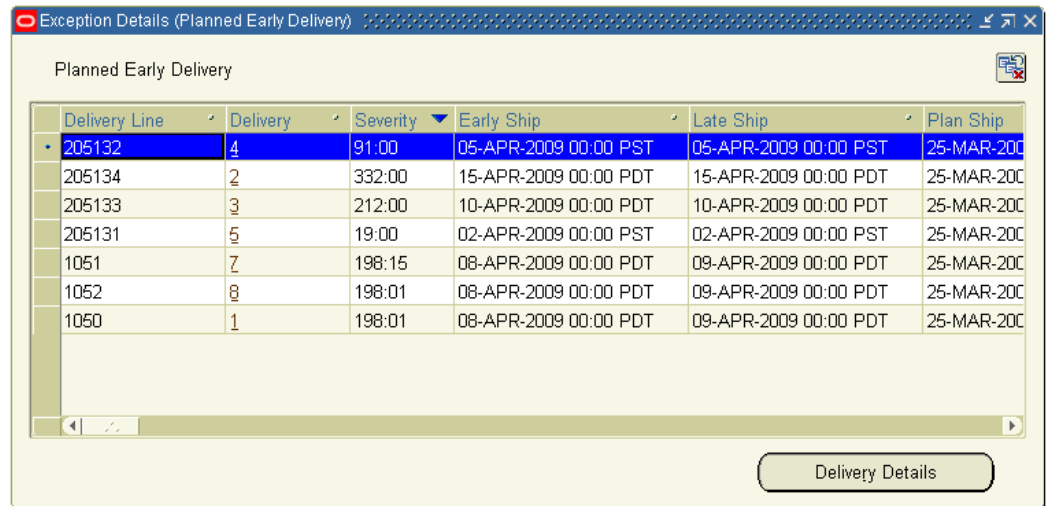
### Planned Early Delivery

The planning system generates the Planned Early Delivery exception when the planned trip stop arrival at a delivery line's destination is earlier than the earliest delivery date on the delivery line.

To avoid this timing conflict, you may want to change the Planned Arrival Date on the stop. Note that if you change the Planned Arrival Date alone, without adjusting the trip or the stops, then an inconsistency may occur between the planned transit time and the actual required transit time. In this case, the planning engine generates a new exception for Inconsistent Planned and Required Transit Times.



### Exception Details (Planned Early Delivery) Window



Delivery Line	Delivery	Severity	Early Ship	Late Ship	Plan Ship
205132	4	91:00	05-APR-2009 00:00 PST	05-APR-2009 00:00 PST	25-MAR-200
205134	2	332:00	15-APR-2009 00:00 PDT	15-APR-2009 00:00 PDT	25-MAR-200
205133	3	212:00	10-APR-2009 00:00 PDT	10-APR-2009 00:00 PDT	25-MAR-200
205131	5	19:00	02-APR-2009 00:00 PST	02-APR-2009 00:00 PST	25-MAR-200
1051	7	198:15	08-APR-2009 00:00 PDT	09-APR-2009 00:00 PDT	25-MAR-200
1052	8	198:01	08-APR-2009 00:00 PDT	09-APR-2009 00:00 PDT	25-MAR-200
1050	1	198:01	08-APR-2009 00:00 PDT	09-APR-2009 00:00 PDT	25-MAR-200

### Planned Late Ship

The planning system generates the Planned Late Ship exception when the planned trip stop departure from a delivery line's origin is later than the latest ship date on the delivery line.

To prevent possible late ships, you may want to change the planned departure date. Note that if you change the planned departure date alone, without correspondingly adjusting the arrival or departure dates and times at other trip stops, then an inconsistency may occur between the planned transit time and the actual required transit time. In this case, the planning engine generates a new exception for Inconsistent Planned and Required Transit Times.

### Exception Details (Planned Late Ship) Window

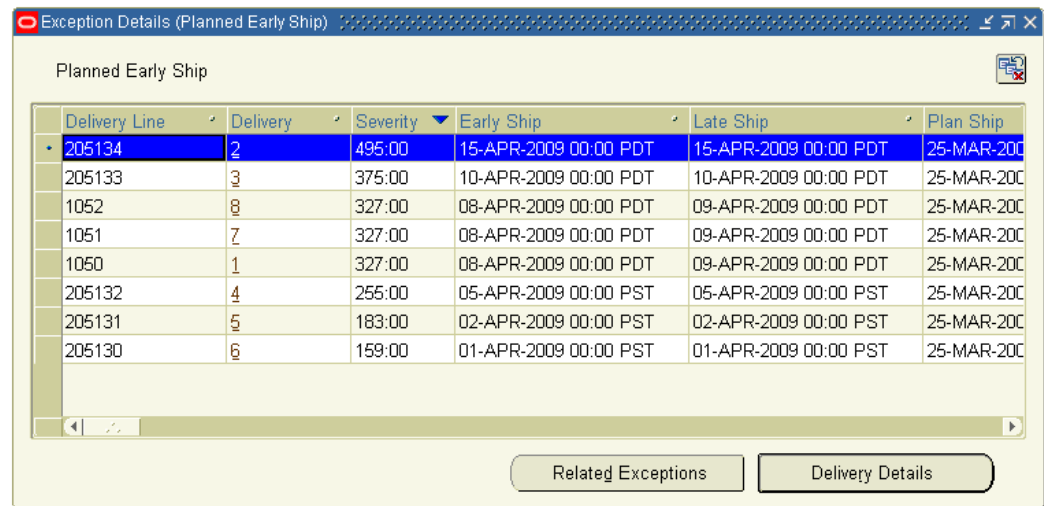
Delivery Line	Delivery	Severity	Early Ship	Late Ship	Plan Ship
189060	3	18:56	09-JAN-2006 02:00 CST	10-JAN-2006 02:00 CST	10-JAN-2006

### Planned Early Ship

The system generates this exception when the planned trip stop arrival time at a delivery's origin is earlier than the earliest ship date on the delivery line.

You may want to change the planned arrival date on the stop to avoid the timing conflict. Note that if you change only the Planned Arrival Date without correspondingly adjusting the arrival and departure dates and times at the other stops in the trip, then an inconsistency may occur between the planned transit time and the actual required transit time. In this case, the planning engine generates a new exception for Inconsistent Planned and Required Transit Times.

### Exception Details (Planned Early Ship) Window



Delivery Line	Delivery	Severity	Early Ship	Late Ship	Plan Ship
205134	2	495:00	15-APR-2009 00:00 PDT	15-APR-2009 00:00 PDT	25-MAR-2009 00:00 PDT
205133	3	375:00	10-APR-2009 00:00 PDT	10-APR-2009 00:00 PDT	25-MAR-2009 00:00 PDT
1052	8	327:00	08-APR-2009 00:00 PDT	09-APR-2009 00:00 PDT	25-MAR-2009 00:00 PDT
1051	7	327:00	08-APR-2009 00:00 PDT	09-APR-2009 00:00 PDT	25-MAR-2009 00:00 PDT
1050	1	327:00	08-APR-2009 00:00 PDT	09-APR-2009 00:00 PDT	25-MAR-2009 00:00 PDT
205132	4	255:00	05-APR-2009 00:00 PST	05-APR-2009 00:00 PST	25-MAR-2009 00:00 PDT
205131	5	183:00	02-APR-2009 00:00 PST	02-APR-2009 00:00 PST	25-MAR-2009 00:00 PDT
205130	6	159:00	01-APR-2009 00:00 PST	01-APR-2009 00:00 PST	25-MAR-2009 00:00 PDT

### Insufficient Transit Time

The planning system generates this exception when a delivery line has the following conditions:

- Latest delivery date is earlier than the Plan start date plus the shortest transit time specified for all available modes and carriers on the lane between the shipment's origin and destination. This is in the case where the Plan start date is later than the earliest ship date.
- Latest delivery date is earlier than the earliest ship date plus the shortest transit time specified for all available modes and carriers on the lane between the shipment's origin and destination. This is in the case where the Plan Start Date is earlier than or the same as the earliest ship date.

The system checks for this exception after the plan run even if you ran the audit report previously. However, the system generates this exception only if you have not corrected the Insufficient Transit Time exception based on the audit report.

Note that the system still plans for this order and, if necessary, violates early ship or late delivery constraints.

You may resolve this exception by changing the latest delivery date in the source order and then re-running the plan. You may also avoid this problem by adding a mode, carrier, and service for this lane on the transportation execution system with a sufficiently short transit time and then re-running the plan.

**Note:** Available Transit Time is calculated as follows:

If the earliest ship date on the delivery line is earlier than the current

system date, then Available Transit Time is equal to the latest delivery date minus the current system date.

If the earliest ship date is not earlier than the current date, then the available transit time is equal to the latest delivery date minus the earliest ship date.

The Required Transit Time is equal to the shortest transit time specified for all available modes and carriers on the lane between the shipment's origin and destination.

In the case of a past due late order, when latest delivery date is earlier than the current system date, the Available Transit Time is zero.

The Transit Time Shortage is equal to the Required Transit Time minus the Available Transit Time.

#### **Exception Details (Insufficient Intransit Time) Window**

Delivery Line	Delivery	Available	Required	Transit Time	Time Passed	Order	Order Line
181984	2	<24:01>	14:48	38:49	102:01	OE	56629
181003	4	<12:00>	14:48	26:48	90:00	OE	56729

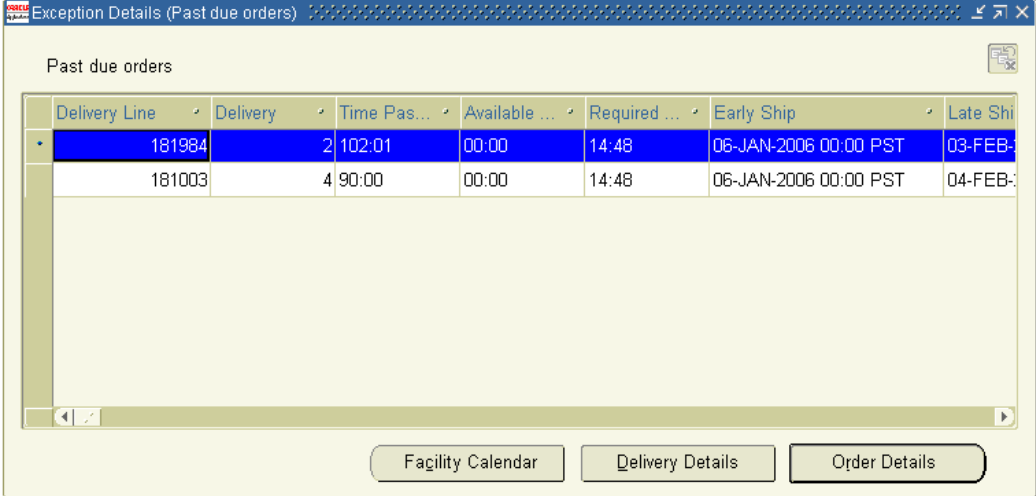
#### **Past Due Order**

The Plan Start and End dates specified as plan options must be later than or equal to the current system date. Based on this definition, the snapshot process never captures a delivery line that is past due on the basis of its latest ship date.

However, when date type is arrival for a non-ATP item, no earliest and latest ship dates exist on the delivery line, but earliest and latest delivery dates exist. The system, therefore, defaults the earliest and latest ship dates to be the plan start and end dates. In this case, delivery lines have ship windows that overlap with the plan horizon, but can have delivery deadlines that are past due. In such cases, the planning engine plans for these delivery lines and also generates the Past Due Order exception. The triggering criterion for this exception is a latest delivery date earlier than the Plan Start date.

To resolve this exception, you may want to change the late delivery date in the source order system and re-run the plan. Note that the time between the current system date and the late delivery date must be greater than the shortest transit time of any service on the shipment's lane.

### ***Exception Details (Past Due Order) Window***



Past due orders

Delivery Line	Delivery	Time Pas...	Available ...	Required ...	Early Ship	Late Shi
181984	2	102:01	00:00	14:48	06-JAN-2006 00:00 PST	03-FEB-
181003	4	90:00	00:00	14:48	06-JAN-2006 00:00 PST	04-FEB-

Facility Calendar    Delivery Details    Order Details

## **Trip and Order Exceptions**

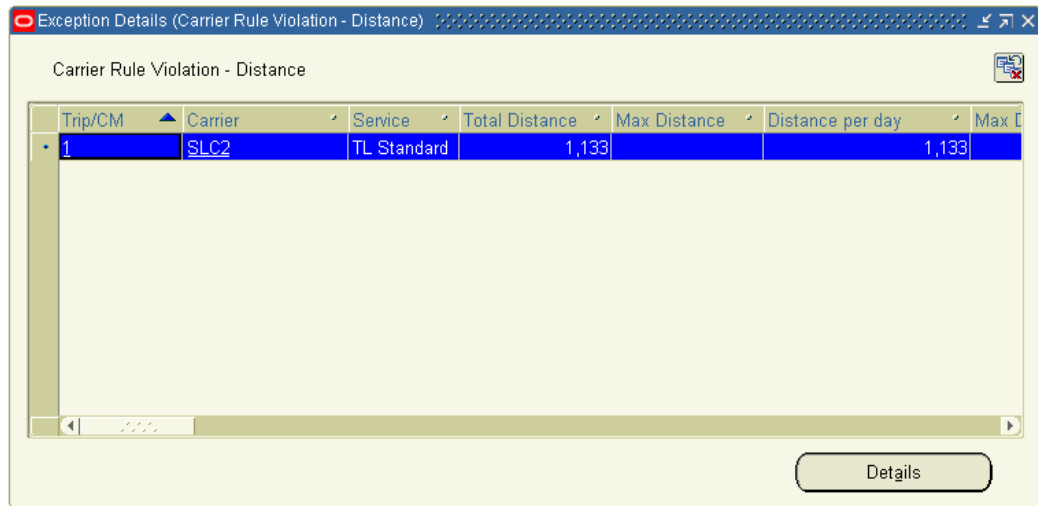
### **Violation of Carrier Rules - Distance**

Truckload carriers may impose their own rules governing how shippers can construct multi-stop trips and continuous moves. These rules are specified at the carrier-service level in the Carriers window. The system triggers an exception when any of these rules are violated in the plan.

- The total distance traveled by a trip assigned to a carrier is greater than the maximum total trip distance allowed by that carrier
- The total distance traveled by a continuous move assigned to a carrier is greater than the maximum total continuous move distance allowed by that carrier

You may make changes to the trips, legs, or stops to avoid this violation.

### Exception Details (Carrier Rule Violation - Distance) Window



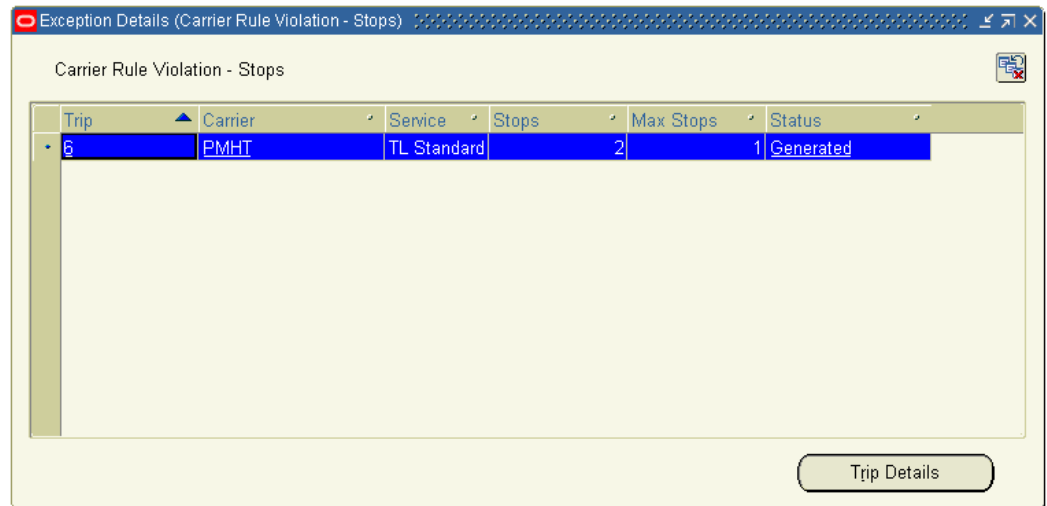
Trip/CM	Carrier	Service	Total Distance	Max Distance	Distance per day	Max L
1	SLC2	TL Standard	1,133		1,133	

### Violation of Carrier Load Rules - Stops

Truckload carriers may impose their own rules governing how shippers can construct multi-stop trips. These rules are specified at the carrier-service level in the Carriers window. The system generates an exception when the number of stops in any given trip assigned to a carrier is greater than the maximum number of stops per trip allowed by that carrier.

You can make changes to the trip, its legs, or its stops to avoid this violation.

### Exception Details (Violation of Carrier Load Rules - Stops) Window



The screenshot shows a window titled "Exception Details (Carrier Rule Violation - Stops)". Inside the window, there is a table with the following columns: Trip, Carrier, Service, Stops, Max Stops, and Status. The first row of data is highlighted in blue and contains the values: 6, PMHT, TL Standard, 2, 1, and Generated. Below the table, there is a button labeled "Trip Details".

Trip	Carrier	Service	Stops	Max Stops	Status
6	PMHT	TL Standard	2	1	Generated

### Violation of Carrier Rules - Time

Truckload carriers may impose their own rules governing how shippers can construct multi-stop trips and continuous moves. These rules are specified at the carrier-service level in the Carriers window. This exception is generated when:

- The total time that a trip assigned to a carrier takes is greater than the maximum total time allowed by that carrier.
- The total duty time in a day is greater than the maximum allowed by that carrier.
- The total driving time in a day is greater than the maximum driving time allowed by that carrier.
- The total time that a continuous move assigned to a carrier takes is greater than the maximum total continuous move time allowed by that carrier.

You may want to make changes to the trips, their legs, or their stops to prevent such a violation.

### Exception Details (Carrier Rule Violation - Time) Window

Trip/CM	Carrier	Service	Total Time	Max Time	Driving Time	Max Dr
1	SLC1	TL Standard	82:16	05:00		
6	SLC1	TL Standard	102:39	05:00		

#### Violation of Carrier Rules - Interspersed Pickups and Drop-offs

Truckload carriers may impose their own rules governing how shippers can construct multi-stop trips. These rules are specified at the carrier-service level in the Carriers window.

An exception is triggered when the trip in the plan has interspersed pick-ups and drop-offs while the carrier requires all pickups before any drop-offs.

You may make changes to the trip, legs, or stops to avoid such a violation.



### Exception Details (Carrier Rule Violation - Interspersed Pickups and Dropoffs) Window

Exception Details (Carrier Rule Violation - Interspersed Pickups and Dropoffs)				
Carrier Rule Violation - Interspersed Pickups and Dropoffs				
Trip	Carrier	Service	Number of Stops	Status
1	PMTR	TL Standard	5	Generated

Trip Details

#### Violation of Carrier Rules - Continuous Moves

Truckload carriers may impose their own rules governing how shippers can construct continuous moves. These rules are specified at the carrier-service level in the Carriers window.

The system generates this exception when the total deadhead distance between two consecutive trips in a continuous move is greater than the maximum deadhead distance allowed by the carrier to whom the continuous move is assigned.

To resolve this exception, you may want to dissolve the continuous move.

### Exception Details (Carrier Rules Violation - Continuous Moves) Window

Continuous Move	Carrier	Service	Vehicle Type	Deadhead Distance	Max Deadhead Dist
6	NDTL6	STANDARD	ND-53 Ft Refrig...	497	497
Z	NDTL6	STANDARD	ND-53 Ft Refrig...	497	497

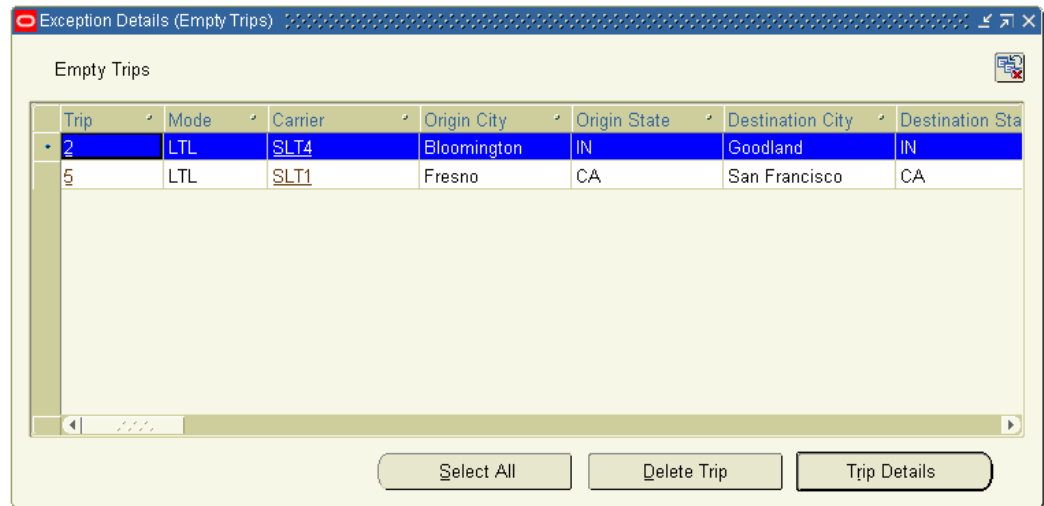
### Empty Trips

The system generates the Empty Trips exception when a truckload, less-than-truckload, or parcel trip does not have any deliveries on it. Note that the empty trip exception is not generated for empty deadhead trips needed to build a continuous move.

You may resolve this exception by deleting the empty trip.

**Note:** You cannot delete a Routing and Contents Firm or Routing Firm trip.

### Exception Details (Empty Trip) Window



Trip	Mode	Carrier	Origin City	Origin State	Destination City	Destination State
2	LTL	SLT4	Bloomington	IN	Goodland	IN
5	LTL	SLT1	Fresno	CA	San Francisco	CA

Select All   Delete Trip   Trip Details

### Dead Stops

The system generates the Dead Stops exception for multi-stop truckload trips when a stop on the itinerary has no pick-up or drop-off activity (no deliveries are loaded or unloaded at that stop).

You may resolve this exception by deleting such a stop.

**Note:** You cannot delete a stop on a Routing and Contents Firm or Routing Firm trip.

### Exception Details (Dead Stops) Window

Trip	Company	Stop Sequence	City	State	Status
1	HM Depot	4	New York	NY	Generated

Select All   Delete Stop   Trip Details

### Inconsistent Planned and Required Transit Times

This exception is triggered when:

- For truckload mode: The planned transit time between two stops is less than the driving time between the stops.
- For less-than-truckload and parcel: The planned transit time of a trip is not exactly equal to the actual transit time.

You can adjust the timing of the stops on the trip to avoid the timing conflict.

**Note:** Planned transit time is equal to the planned arrival date at destination minus the planned departure date at origin. When you change only the planned departure date or planned arrival date without adjusting the arrival and departure dates and times at the other stops in the trip, an inconsistency may exist between the planned transit time and the actual required transit time.

The system may generate this exception for firm trips that do not allow for sufficient transit time between stops.

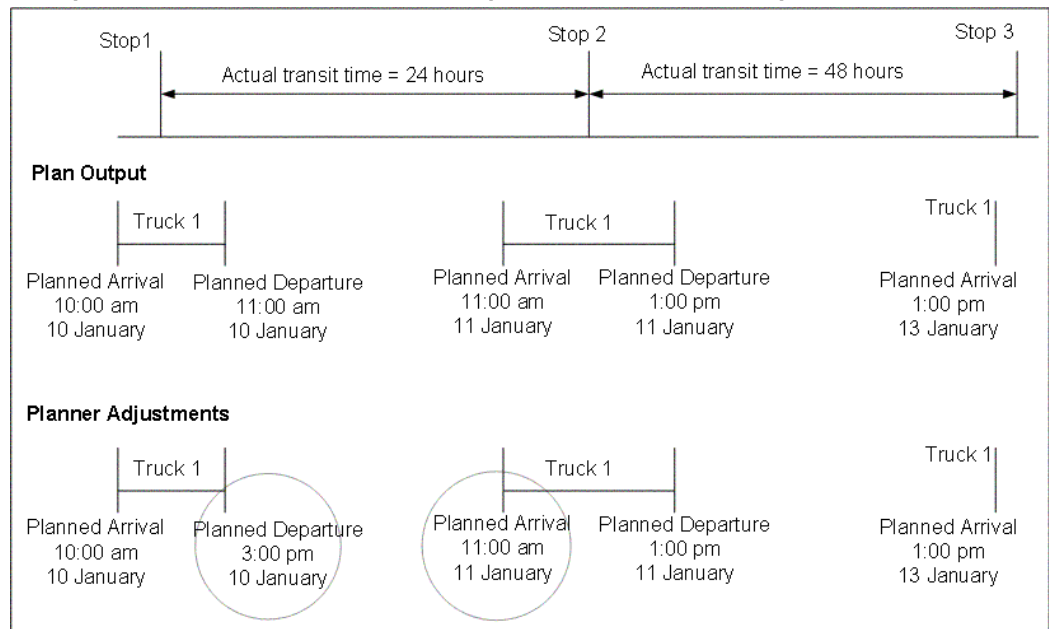
### Exception Details (Planned In-Transit Time Inconsistent With Actual In-Transit) Window

Exception Details (Planned in-transit time inconsistent with actual in-transit)					
Planned in-transit time inconsistent with actual in-transit					
Trip	Plan Transit Time	Required Transit Time	Transit Time Gap	Plan Departure	Plan Arriv
53	109:59	96:00	13:59	14-FEB-2006 17:00 MST	19-FEB-2
57	111:59	96:00	15:59	14-FEB-2006 17:00 EST	19-FEB-2

Related Exceptions   Trip Details

Example for Inconsistent Planned and Required Transit Times, page 10-33 illustrates an example scenario that triggers a Inconsistent Planned and Required Transit Times exception.

### Example for Inconsistent Planned and Required Transit Times Exception



Truck 1 is a multi-stop truckload with stops 1, 2, and 3. The actual transit time required for the truck to traverse the distance from Stop 1 to Stop 2 is 24 hours and from Stop 2 to Stop 3 is 48 hours.

The planned arrival and departure dates and times at the different stops are as follows:

### ***Planned Stop Arrival and Departure Times***

<b>Stop</b>	<b>Arrival Time</b>	<b>Departure Time</b>
Stop 1	10 January, 10:00 a.m.	10 January, 11:00 a.m.
Stop 2	11 January, 11:00 a.m.	11 January, 1:00 p.m.
Stop 3	13 January, 1:00 p.m.	13 January, 3:00 p.m.

After planner adjustments, the arrival and departure dates and times at the different stops are discussed in the following table.

<b>Stop</b>	<b>Arrival Time</b>	<b>Departure Time</b>
Stop 1	10 January, 10:00 a.m.	10 January, 3:00 p.m.
Stop 2	11 January, 11:00 a.m.	11 January, 1:00 p.m.
Stop 3	13 January, 1:00 p.m.	13 January, 3:00 p.m.

In this example, the planner has adjusted the planned departure time from Stop 1, but has not made the corresponding adjustments to planned arrival time at Stop 2. An inconsistency exists between the planned transit time and the actual transit time required from Stop 1 to Stop 2.

Transit Time Discrepancy = Planned Transit Time - Actual Transit Time

### **Hours of Service Violation**

Governmental rules and regulations indicate hours of service limits and required layover times for drivers. You can specify the hours of service limits in the Global Preferences window. See 'Step 24: Set Up Global Preferences, page 5-11 for more information.

The system generates the Hours of Service Violation exception if a trip schedule violates the regulated rules for driving hours, duty hours, or layover time.

You can make changes to the trip schedule so that it meets the regulated time stipulations.

### Exception Details (Hours of Service Violation) Window

Trip	Carrier	Driving Time	Max Driving Time	Layover Time	Min Layover Time
1	SLC2	20:36	11:00		

### Delivery Lines with Zero Quantity

This exception is generated when the planning engine finds a delivery line with zero pieces, cube, or weight in the input data.

The system identifies this exception if the audit report is run prior to launching the plan. If the planner does not correct this condition before the plan launch, then the planning engine handles this input line in the following manner:

1. For all items that are transactable, the Oracle Transportation Planning snapshot process captures the item unit weight, volume, length, width, and height as defined in the inventory system.
2. If a quantity greater than zero exists on the delivery line, but weight and volume are not present, then the engine calculates the total weight and volume for that delivery line based on the order quantity and the item specifications from step 1 and plans on the basis of this weight and volume. A plan exception under the exception group Trip and Order Exceptions for Delivery lines with zero weight, pieces, or cube results.
3. If quantity is zero, but the delivery line has a unit weight or volume, then the planning engine plans on the basis of these weight or volume values. The planning system still generates this exception.
4. If quantity is zero and unit weight and unit volume is equal to zero, and the delivery line is not attached to a firm delivery, the planning engine does not plan this delivery line at all. In this case, the planning engine still generates this exception under Trip or Order Exceptions.
5. If quantity is zero and unit weight and unit volume is zero, and the delivery line is

attached to a firm delivery, the planning engine plans this delivery line with its delivery's constituent delivery lines. The system still generates an exception.

To resolve this exception, you may change the quantity of pieces, cube, or weight on the purchase order, sales order, or internal order line or on the delivery line in Oracle Shipping Execution and then run the plan again.

#### **Exception Details (Delivery Lines with Zero Quantity) Window**

Trip	Carrier	Delivery Line	Delivery	Weight	Weight UOM	Volume	Volume UOM
72	PMC4	178153	108	20,000	Lbs	0	FT3

#### **Ship Set Violation**

Ship sets are specified in Order Management at the time of order entry. A ship set consists of a group of lines within an order that need to be kept together for shipping (from ship-from point to ship-to point). You can use the Ship Set constraints in Transportation Planning to enforce ship sets at the same-trip level, i.e. if elements of a ship set must travel together throughout the entire itinerary. This exception alerts the user if such a constraint is violated. Note that, if some order lines in a ship set fall outside the plan scope, the out-of-scope lines are not considered by the planning engine and will not trigger a Ship Set Violation exception.

#### **Arrival Set Violation**

Arrival sets are specified in Order Management at the time of order entry. An arrival set consists of a group of lines within an order that need to be delivered together (sometimes referred to as a "merge in transit" scenario). You can use the Arrival Set constraints in Transportation Planning to enforce arrival sets at the same-trip level, i.e. if elements of an arrival set must be delivered on the same trip. This exception alerts the user if such a constraint is violated. Note that, if some order lines in an arrival set fall outside the plan scope, the out-of-scope lines are not considered by the planning engine and will not trigger an Arrival Set Violation exception.



### Item-Mode Incompatibility

The system generates this exception when a trip of a specific mode of transportation carries items incompatible with that mode. The constraint information driving this exception is set up in Transportation Execution. For more information on setting up item-mode compatibility constraints, see 'Step 22: Set Up Compatibility Constraints, page 4-66.

### Item-Carrier Incompatibility

The system generates this exception when a trip of a specific carrier carries items incompatible with that carrier. The constraint information driving this exception is set up in Transportation Execution. For more information on setting up item-carrier compatibility constraints, see 'Step 22: Set Up Compatibility Constraints, page 4-66.

## Carrier Exceptions

### Carrier Vehicle Availability Exceeded

The system generates the Carrier Vehicle Availability Exceeded exception only for truckload carriers when the number of trips assigned to a carrier, service, and vehicle type on a specific lane is greater than the vehicle availability for the carrier, service, and vehicle type on that lane for a given duration.

To resolve this exception, you can assign a different carrier, service, and vehicle type to some of the trips involved.

**Note:** Exceeded Carrier Vehicle Availability = Assigned Trips - Available Trips

This is an exception type for which the transportation planning system guides you in finding opportunities for exception resolution. See 'System Guided Exception Resolution, page 10-69 for more information.

Selecting a trip on such a carrier and then selecting Reassign populates the Alternate Carriers block of the Exception Details window with carriers that service the lane of the trip and have available capacity. You can then assign the trip to a carrier with vehicle availability on that lane.

### Exception Details (Carrier Vehicle Availability Exceeded) Window

Exception Details (Carrier Vehicle Availability Exceeded)

Carrier Vehicle Availability Exceeded

Carrier	Lane/Lane Group	Vehicle Type	Available	Assigned	Excess	Start Date
RSTL1	RS-Rich-Chic_STAN...	RS-53 ft	1	3	2	20-MAY-20

Trip	Service	Origin City	Origin State	Destination City	Destination State
10	TL Standard	Richmond	VA	Chicago	IL
11	TL Standard	Richmond	VA	Chicago	IL
12	TL Standard	Richmond	VA	Chicago	IL

Reassign      Trip Details

Select Analyze to calculate the cost impact and exceptions or Change Carrier to implement the change.

Carrier	Mode	Service	Vehicle Type	Cost	Cost Difference
---------	------	---------	--------------	------	-----------------

Change Carrier      Analyze

#### Carrier Commitment Underutilization

The system generates this exception if insufficient trips, weight, or spend is assigned to a carrier in the lane of interest to meet an indicated carrier commitment. In considering the carrier commitments, the system takes into account period-to-date history. For more information on setting up carrier commitments, see 'Step 17: Set Up Carrier Commitments, page 4-34.

## Timing Exceptions

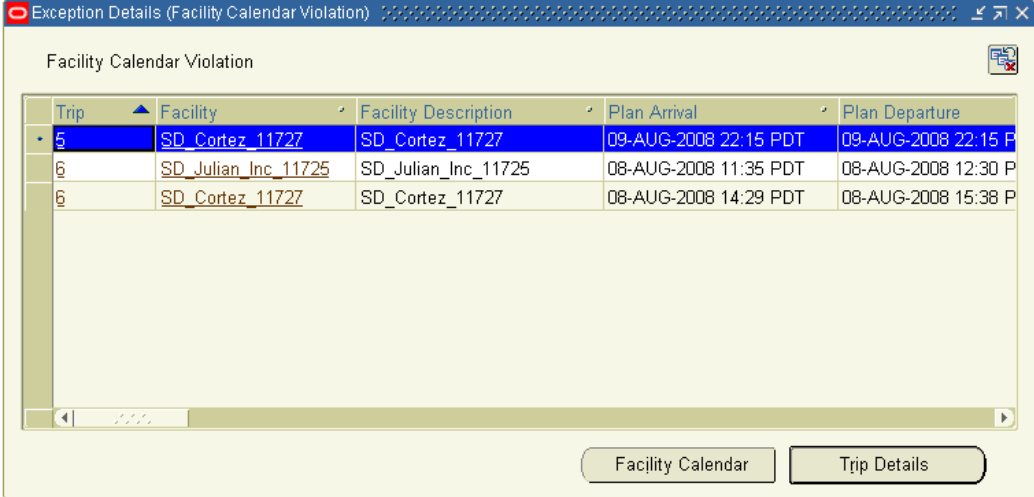
#### Facility Calendar Violation

A facility has indicated days and hours of operations that may include regular schedules as well as schedules for holidays. Any loading, unloading, consolidation, or deconsolidation activity at the facility must be done within its operating hours. The system generates the Facility Calendar Violation exception if a facility's operating schedule is violated by a trip scheduled outside of the facility's hours of operation. For example, consider a facility that operates from 8:00 a.m. to 6:00 p.m. The system

generates the Facility Calendar Violation exception when a trip is scheduled to arrive at this facility at 8:00 p.m.

To resolve this exception, you may adjust the planned arrival date or the planned departure date on the trip stop such that it falls completely within the facility's normal hours of operation.

#### **Exception Details (Facility Calendar Violation) Window**



Trip	Facility	Facility Description	Plan Arrival	Plan Departure
5	SD_Cortez_11727	SD_Cortez_11727	09-AUG-2008 22:15 PDT	09-AUG-2008 22:15 P
6	SD_Julian_Inc_11725	SD_Julian_Inc_11725	08-AUG-2008 11:35 PDT	08-AUG-2008 12:30 P
6	SD_Cortez_11727	SD_Cortez_11727	08-AUG-2008 14:29 PDT	08-AUG-2008 15:38 P

#### **Insufficient Stop Time**

The system generates this exception when a vehicle trip stop does not have sufficient time to unload and load; that is, the unload time plus the load time for a vehicle trip at a stop is greater than the planned departure date and time minus the planned arrival time at that stop. You specify the loading rate and the unloading rate at a facility in terms of weight, cube, or pallets per unit of time. The system calculates the load time and the unload time for each stop based on the cube, weight, or pallets loaded and unloaded at that stop. The system then compares the total loading and unloading time with the Plan Arrival and Plan Departure dates and times for the stop and triggers the exception if necessary.

You may change the Plan Arrival or the Plan Departure date of the stop to avoid this problem.

**Note:** Time Shortfall = Required Load and Unload Time - Stop Time

### Exception Details (Insufficient Stop Time for the Load) Window

Trip	Stop Time	Time UOM	Required Load/Unload Time	Shortfall	Plan Arrival
5	00:00	HR	00:08	00:08	28-NOV-2006 23:09 MST
6	00:00	HR	00:08	00:08	29-NOV-2006 23:09 MST

### Insufficient Connect Time

The system generates this exception when the unload time plus the flow through time plus the load time for an order is more than the Plan Departure of the outbound trip minus the Plan Arrival time of the inbound trip for that order at a facility. The facility can be a consolidation, deconsolidation, or cross-dock facility. You specify the loading rate and unloading rate at a facility in terms of weight, cube, pieces, or pallets per unit of time. The system calculates the load time and the unload time for each load based on the cube, weight, pieces, or pallets loaded and unloaded. The flow-through time (for a shipment) at the facility is specified in units of time. For example, the flow-through time for a cross-dock facility can be 2 hours, indicating that it takes 2 hours after unloading before loading can begin.

The system compares the total of the unloading, flow through, and load time with the Plan Arrival and Plan Departure times for the trips carrying the order into and out of that facility and triggers an exception if necessary.

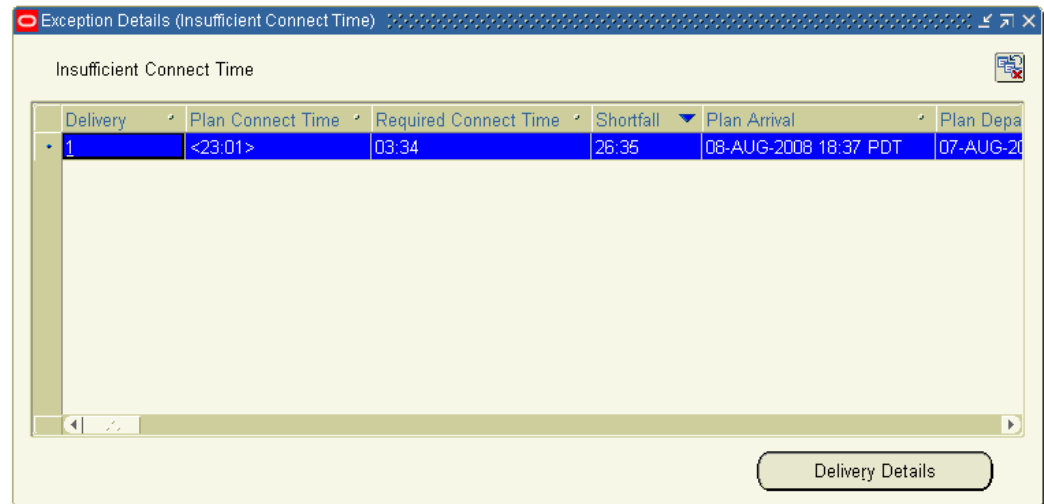
To avoid problems due to insufficient connect time, you may change the Plan Arrival dates or the Plan Departure dates on the trips associated with the order.

**Note:** Time Shortfall = Required Connect Time - Planned Connect Time

Required Connect Time = Unloading Time + Flow Through Time +  
Loading Time

Planned Connect Time = Planned Departure of Outbound Trip -  
Planned Arrival of Inbound Trip

### Exception Details (insufficient Connect Time) Window



The screenshot shows a window titled "Exception Details (insufficient Connect Time)". Inside the window, there is a table with the following columns: Delivery, Plan Connect Time, Required Connect Time, Shortfall, Plan Arrival, and Plan Departure. The first row of data is highlighted in blue and contains the values: 1, <23:01>, 03:34, 26:35, 08-AUG-2008 18:37 PDT, and 07-AUG-2008 18:37 PDT. Below the table is a "Delivery Details" button.

Delivery	Plan Connect Time	Required Connect Time	Shortfall	Plan Arrival	Plan Departure
1	<23:01>	03:34	26:35	08-AUG-2008 18:37 PDT	07-AUG-2008 18:37 PDT

#### Continuous Move Improperly Timed

This exception applies to a continuous move in which the arrival date of any trip, loaded or empty, is after the departure date of the subsequent trip. This, together with the exception on inconsistent transit time, exposes poorly constructed continuous moves. The two exceptions, however, are not related.

To resolve this issue, you can change the departure or arrival times or both of one or both trips. You may also dissolve the continuous move.

### Exception Details (Continuous Move Improperly Timed) Window

Continuous move improperly timed

Continuous Move	Carrier	Service	Vehicle Type	Firm Status	Status
4	SD_C3	STANDARD	SD_48_REF_Tra...	Not Firm	Generated

CM Details

Trips

Trip	Origin City	Origin State	Destination City	Destination State	Distance	Departure
------	-------------	--------------	------------------	-------------------	----------	-----------

Trip Details

### Ship Window Violating Facility Calendar

The system generates this exception when a delivery line's earliest and latest ship dates are outside the origin facility's normal hours of operation. For example, consider a facility that has hours of operation 8:00 a.m. to 5:00 p.m. If a shipment has the earliest ship date equal to 6:30 p.m. and the latest ship date as 11:00 p.m. on the same day, then the system generates this exception.

To resolve this exception, you may change the earliest or latest ship dates on the order line in the source order and then launch the plan.

### Exception Details (Ship Window Violating Facility Calendar) Window

Delivery Line	Delivery	Order	Order Line	Ref. Order Line	Origin Facility	Origin C
214940	2	OE	69057	1	ND-SFO_ND-SFO	My Con
214941	1	OE	69057	2	ND-SFO_ND-SFO	My Con

Facility Calendar    Delivery Details    Order Details

#### Delivery Window Violating Facility Calendar

The system generates this exception when a shipment's earliest and latest delivery dates are outside the destination facility's normal hours of operation. For example, consider a facility that operates from 8:00 a.m. to 8:00 p.m., Monday through Friday. If a shipment has earliest delivery date on Saturday and latest delivery date on Sunday, then the system generates this exception.

To resolve this exception, you can change the early or the late delivery dates in the source order and then launch the plan.

### Exception Details (Delivery Window Violating Facility Calendar) Window

Delivery Line	Delivery	Order	Order Line	Ref. Order Line	Origin Facility	Origin C
188322	4	PO	7077	1		

Facility Calendar    Delivery Details    Order Details

#### Carrier Facility Appointment Violation

The system generates this exception when a carrier having a standing appointment at a facility is scheduled at that facility any time outside of the appointment definition. This constraint and exception applies only to carriers having a standing appointment at a facility. Other carriers can be scheduled at a facility at any time without this exception being generated. For example, suppose that Carrier A has a standing appointment on Wednesdays at 10-11 a.m. at Facility X (and no other standing appointment time there). If a trip of carrier A arrives at X at 10:30 a.m. Wednesday and departs at 11:30 a.m. Wednesday, then that trip's presence at the facility falls partially outside of the appointment window and triggers an exception. If the trip arrives on any day other than Wednesday, regardless of the time, that would also cause an exception. This exception, however, is not generated for any carrier-facility combination that does not have a carrier-facility calendar (standing appointment) defined.

## Cost Exceptions

#### Lower Cost Carrier Available

The system generates this exception when an alternative lower cost carrier is available for a trip. The planning engine may not have chosen the lower cost carrier because it violates some constraint. The exception highlights the lower cost alternative or alternatives to the planner and enables the planner to choose the best option.

To resolve this exception, you may change the carrier assigned to the trip.

**Note:** Potential Cost = Cost of using lower cost alternative carrier

Potential Savings = Cost - Potential Cost



This is an exception type for which Oracle Transportation Planning guides you in finding opportunities for exception resolution. See #System Guided Exception Resolution, page 10-69 for more information. Selecting a trip and then selecting Resolve populates the Alternative Carriers block of the Exception Details screen with available lower cost carriers. You can then assign the trip to one of these carriers.

**Exception Details (Lower Cost Carrier Available) Window**

Exception Details (Lower Cost Carrier Available)

Lower Cost Carrier Available

Trip	Mode	Carrier	Service	Vehicle Type	Cost	Alternative Carrie
6	TL	SLC1	TL Standard	SD_53Feet_truck	4,560.19	SLC2

ResolveTrip Details

Alternative Carriers

Select a lower cost carrier. Select Analyze to calculate cost impact and exceptions or Change Carrier to implement the chan

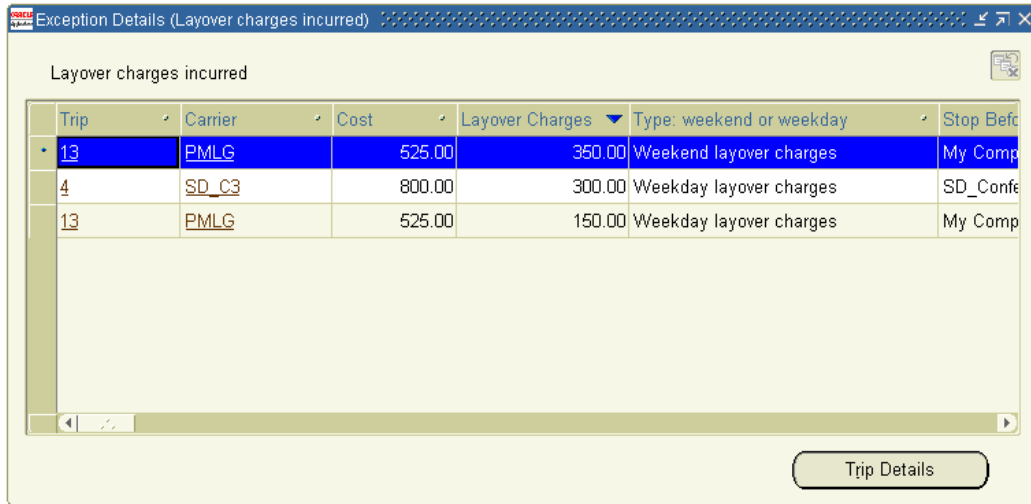
Carrier	Mode	Service	Vehicle Type	Cost	Cost Difference
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AnalyzeChange Carrier

**Layover Charges Incurred**

The system generates this exception when a trip is scheduled with a weekend or a chargeable weekday layover. The exception points out the extra charges so that you can decide whether to schedule the trip in a different manner to avoid them.

### Exception Details (Layover Charges Incurred) Window



Trip	Carrier	Cost	Layover Charges	Type: weekend or weekday	Stop Befc
13	PMLG	525.00	350.00	Weekend layover charges	My Comp
4	SD_C3	800.00	300.00	Weekday layover charges	SD_Confe
13	PMLG	525.00	150.00	Weekday layover charges	My Comp

## Vehicle Exceptions

### Overutilized Vehicle

The system generates this exception for a truckload trip when the amount of weight, volume, or pallets on the vehicle is greater than the maximum effective capacity of the vehicle. For example, suppose that the specified weight capacity for a truck is 28,000 Lbs. The system generates the exception for any load that exceeds this weight by a margin greater than the specified threshold. The planner may decide to ignore it and increase the utilization of the vehicle by exceeding the effective capacity. This may accommodate smaller shipments on the truck which otherwise travel by less-than-truckload or parcel trips.

**Note:** Utilization of the vehicle is the maximum of weight, cube, or pallet utilization.

This is an exception type for which Oracle Transportation Planning guides you in finding opportunities for exception resolution. You can re-assign deliveries from this trip to other trips. See 'System Guided Exception Resolution, page 10-69 for more information.

### Exception Details (Overutilized Vehicle) Window

Overutilized Vehicle

Trip	Weight (Gross)	Weight Capacity	Cube	Cube Capacity	Pallets	Pallet Capacity	Physical Capacity
6	8,750	44,000	2,800	2,600	0	48	3,5

Vehicle Parameters Trip Details

Deliveries

Delivery	Origin Company	Origin City	Origin State	Destination Company	Destination City	Destination
10	My Company	Berlin	VT	OM Depot	Nashville	TN
11	My Company	Berlin	VT	HM Depot	Marietta	OH
12	My Company	Berlin	VT	HM Depot	New York	NY

Reassign Delivery Details

Alternative Trips Utilization%

Select Analyze to calculate cost impact and exceptions or Add to Trip to assign the selected delivery to a trip.

Trip	Origin Company	Origin City	Origin State	Destination Company	Destination City	Desti
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Select All (B) Add to Map Map Add to Trip Trip Details Analyze

### Under-Utilization of Vehicle Capacity

The system generates this exception for a truckload trip when the load on the vehicle is less than the specified effective capacity of the vehicle. This capacity can be in terms of cube, weight, or number of pallets.

To prevent under-utilization of vehicle capacity, you may assign all of the deliveries on this trip to other trips or add deliveries from other trips onto this particular trip.

**Note:** Capacity utilization of the vehicle is the maximum of weight, cube, or pallet utilization.

This is an exception type for which Oracle Transportation Planning guides you in finding opportunities for exception resolution. See 'System Guided Exception Resolution, page 10-69 for more information.

Selecting a trip and then clicking Resolve finds less-than-truckload and parcel movements or unassigned deliveries that can fit into this vehicle. You can then assign any of these to the under-utilized truckload.

### Exception Details (Underutilized Vehicle) Window

Exception Details (Underutilized Vehicle)

Underutilized Vehicle

Trip	Weight (Gross)	Weight Capacity	Cube	Cube Capacity	Pallets	Pallet Capacity	Carrier	Origin City
1	5,000	44,000	1,000	3,300	0		SLC2	Denver

Resolve Trip Details

—Trip Stop and Legs—

Stops Legs

Stop	Company	Facility	City	State	Arrival	Departure
1	My Company	SD_Denver_S...	Denver	CO	30-SEP-2008 10:00 MDT	30-SEP-2008 10:17 MDT
2	SD_PL_LTL4	SD_PL_LTL4...	Goodland	IN	01-OCT-2008 07:52 CDT	01-OCT-2008 08:09 CDT

Stops Details

—Candidate Shipments— Utilization%

Select a trip/order to assign to the underutilized trip. Select Analyze to review cost impact and exceptions or Add to Trip to implement the change.

Trip/Delivery	Mode	Origin Company	Origin City	Origin State	Destination Company	Destination City
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Select All Map Add to Map Add to Trip Details Analyze

### Item-Vehicle Incompatibility

The system generates this exception when a trip with a specified vehicle type carries an item that is not compatible with the vehicle type. The constraint information driving this exception is set up in Transportation Execution. For more information on setting up item-vehicle compatibility constraints, see 'Step 22: Set Up Compatibility Constraints, page 4-66.

## Facility Exceptions

### Facility Dock Capacity Exceeded

The system generates this exception when the number of trucks scheduled at a facility at a given point of time is greater than the number of available docks at the facility. This can be a receiving, loading, consolidation, deconsolidation, or cross-docking facility. For example, if two trucks are scheduled to arrive at the same time a facility that has only one dock, this exception results.

To avoid exceeding facility dock capacity, you may change the planned arrival date and planned departure date on some of the truckload trips scheduled at the facility.

**Note:** Exceeded Facility Dock Capacity is equal to the number of trips present at the facility minus the number of docks available.

This exception type applies only to truckload trips.

**Exception Details (Facility Dock Capacity Exceeded) Window**

Facility	Docks	Trips Assigned	Excess	Start Date/Time	End Date/Time
PM-Berlin_PM-Berlin	1	2	1	27-FEB-2006 02:00 EST	27-FEB-2006 03:44 EST
PM-Berlin_PM-Berlin	1	2	1	01-MAR-2006 02:00 EST	01-MAR-2006 03:59 EST
PM-Berlin_PM-Berlin	1	2	1	03-MAR-2006 02:00 EST	03-MAR-2006 03:29 EST
PM-Berlin_PM-Berlin	1	2	1	06-MAR-2006 02:00 EST	06-MAR-2006 04:29 EST

Facility Parameters

Trip	Stop Sequence	Plan Arrival at Facility	Planned Departure Date	Origin City	Origin State
19	1	27-FEB-2006 02:00 EST	27-FEB-2006 04:00 EST	Berlin	VT
1Z	1	27-FEB-2006 02:01 EST	27-FEB-2006 03:01 EST	Berlin	VT

Trip Details

**Facility's Handling Capacity Exceeded**

This exception is triggered when the volume of shipments originating, terminating, or passing through a facility exceeds the maximum number of pieces, maximum weight, or maximum cube of deliveries that may originate, terminate, or pass through a facility per unit of time.

To avoid facility handling capacity being exceeded, you may change the planned arrival or departure dates for some of the trips to and from the facility. You may also re-route shipments that are being consolidated or deconsolidated at the facility either to travel through different facilities or to travel direct.

### Exception Details (Facility's Handling Capacity Exceeded) Window

Facility	Weight (Gross)	Weight Capacity	Cube	Cube Capacity	Pallets	Pallets Capacity
SD_Denver_SD_Denver	5,000	200	0	0	0	

Trip	Stop Sequence	Plan Arrival at Facility	Plan Departure at Facility	Origin City	Origin State
1	1	30-SEP-2008 10:00 MDT	30-SEP-2008 10:17 MDT	Denver	CO

### Facility - Vehicle Incompatibility

You can specify that certain facilities cannot be serviced by certain vehicle types. See '4. Facility-Vehicle Compatibility, page 4-72 for more information. The Facility - Vehicle Incompatibility exception is triggered if a trip visiting a facility uses a vehicle type incompatible with the facility. For example, a facility whose loading dock faces a narrow alley may not be able to accommodate a particularly long trailer.

You may assign the trip to a different vehicle type to avoid such an incompatibility.

**Note:** This is an exception type for which Oracle Transportation Planning guides you in finding opportunities for exception resolution. See 'System Guided Exception Resolution, page 10-69 for more information.

You can search for a vehicle type that is compatible with the facility using the Resolve button. This finds all the carrier-service-vehicle combinations that are valid for that lane and with all the other facilities on that trip.

### Exception Details (Facility - Vehicle Incompatibility) Window

Facility Code	Trip	Carrier	Service	Vehicle Type	Company	City	
RS-Richmond	RS-Ric	25	RSTL1	TL Standard	RS-48 ft	My Company	Richmond

**Alternatives**

Select a new vehicle type for this trip. Select Analyze to calculate cost impact and exceptions or Change Vehicle to implement

Carrier	Mode	Service	Vehicle Type	Cost	Cost Difference
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### Pool Facility - Carrier Incompatibility

You can specify that only certain carriers can perform the line haul or local haul functions to or from specific carrier facilities. You specify this while setting up facilities. See 'Types of Activities at a Facility, page 4-23 for more information. For example, if Carrier XYZ owns a cross-docking facility, then Carrier XYZ may require that it be the local haul carrier. An exception is triggered if any other carrier is assigned to perform the local haul from this facility.

To resolve this incompatibility, you may assign the offending trip to the required carrier.

**Note:** This is an exception type for which Oracle Transportation Planning guides you in finding opportunities for exception resolution. See 'System Guided Exception Resolution, page 10-69 for more information.

Selecting a trip and then the Change Carrier button assigns the trip to the required carrier.

### Exception Details (Pool Facility - Carrier Incompatibility) Window

Facility	Company	City	State	Carrier Requirements	Carrier
SD_PL_LTL4_11757	SD_PL_LTL4	Goodland	IN	EITHER	SLC2
SD_PL_LTL4_11757	SD_PL_LTL4	Goodland	IN	EITHER	SLT6
SD_PL_LTL4_11757	SD_PL_LTL4	Goodland	IN	EITHER	SLT6

Change Carrier   Facility Parameters   Trip Details

### Missing Latitude and Longitude

The system generates this exception when any facility in the snapshot has a null value for the latitude or longitude. The facility can be the ship-from or ship-to point of a delivery line or a pooling or cross-docking facility. One exception is generated per facility. The system generates this exception only when the parameter Run Audits is set to Yes in the Launch Plan concurrent request.

### Exception Details (Missing Latitude and Longitude) Window

Delivery Line	Delivery	Order	Order Line	Ref. Order	Origin Facility	Origin Carrier
					SK_FACST102	DHL
					SK_FACST100	Federal
					Central Operations_C...	My Con

Facility Calendar   Delivery Details   Order Details

### Facility - Item Incompatibility

The system generates this exception when an item is routed through a pool or cross-dock facility that is not compatible with the given item. This exception only



applies to the routing of such items through intermediate points; it will not be generated when the ship-from or ship-to facility of an order is prohibited from handling the indicated item. The constraint information driving this exception is set up in Transportation Execution. For more information on setting up item-facility compatibility constraints, see 'Step 22: Set Up Compatibility Constraints, page 4-66.

#### **Facility - Mode Incompatibility**

The system generates this exception when a trip with an inappropriate mode of transportation visits a specified facility. This can apply to ship-from, ship-to, or intermediate pool or cross-dock facilities. The constraint information driving this exception is set up in Transportation Execution. For more information on setting up facility-mode compatibility constraints, see 'Step 22: Set Up Compatibility Constraints, page 4-66.

#### **Facility - Facility Incompatibility**

The system generates this exception when an order from or to a specified ship-from or ship-to location is routed through a disallowed pool or cross-dock facility. Note that this constraint will not be generated if the constraint information specifies a particular pool point (or pool points) for a facility but the facility is served directly (with no pool point or cross-dock). The exception will only be generated if the facility is served by any other pool point than that (those) specified. The constraint information driving this exception is set up in Transportation Execution. For more information on setting up facility-facility compatibility constraints, see 'Step 22: Set Up Compatibility Constraints, page 4-66.

**Note:** This exception may be generated by incompatible combinations of facilities specified either as individual facility-facility incompatibility constraints or via region-facility compatibility constraints.

#### **Unused Drop Trailer Opportunity**

Sometimes, a carrier has a drop trailer arrangement at a facility. The system generates this exception when a trip assigned to the corresponding carrier makes a stop at such a facility but the facility is not the first or last stop of the trip.

You may re-sequence the stops or the trip manually to use the drop trailer opportunity. You will have to do so in Oracle Transportation Execution after the release of the trip from Oracle Transportation Planning.

### Exception Details (Unused Drop Trailer Opportunity) Window

Trip	Carrier	Stops	Type	Stop Sequence	Company	Facility	Facility Name
5	PMAF	3	Customer	2	OD Depot	OD Depot_6621	OD Depot_6621
7	PMAF	3	Customer	2	My Company	PM-Broomfield	PM-Broomfield

## Trading Partner Exceptions

### Trading Partner - Carrier Incompatibility

This exception is generated when customer-carrier or supplier-carrier compatibility constraint is violated.

**Note:** This is an exception type for which Oracle Transportation Planning guides you in finding opportunities for exception resolution. See 'System Guided Exception Resolution, page 10-69 for more information.

You can search for a carrier that is compatible with the trading partner using the Resolve button. This finds all the carrier-service-vehicle type combinations that are valid for that lane and are compatible with all the other trading partners on the trip.

### Exception Details (Trading Partner - Carrier Incompatibility) Window

Trip	Trading Partner	Type	Carrier	Mode	Origin Company	Destination Company
13	DM Depot	Customer	PMLG	TL	My Company	DM Depot

**Alternative Carriers**

Select a new vehicle carrier for this trip. Select Analyze to calculate cost impact and exceptions or Change Carrier to implement

Mode	Carrier	Service	Vehicle Type	Cost	Cost Difference
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### Customer - Customer Incompatibility

Some customers require that their goods do not travel in the same load as those of certain other customers; for example, their competitors, or of any other customers. An exception is triggered if this condition is violated.

To resolve this exception, you may assign the deliveries causing the exceptions to separate trips.

**Note:** This is an exception type for which the transportation planning system guides you in finding opportunities for exception resolution. You can select one of the deliveries causing this exception and re-assign it to a different trip. See 'System Guided Exception Resolution, page 10-69 for more information.

### Exception Details (Customer - Customer Incompatibility) Window

Customer - customer incompatibility

Trip	Mode	Carrier	Customer 1	Customer 2	Status
3	TL	PMC2	Cortez Inc	Julian Inc	Generated

Trip Details

**Delivery Lines**

Delivery	Delivery Line	Item	Item Description	Origin Company	Origin City	Origin
12	182118	DG-Green Tea	DG-Green Tea	My Company	Memphis	TN
14	182118	DG-Green Tea	DG-Green Tea	My Company	Memphis	TN

MST\_STRING\_REASSIGN Delivery Details

**Alternative Trips**

Select Analyze to review cost impact and exceptions or Add to Trip to assign the delivery to a new trip.

Trip	Origin Company	Origin City	Origin State	Destination Company	Destination City
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Add to Trip Analyze

## Unplanned Deliveries

### Unassigned Deliveries

The system generates this exception when deliveries are left unplanned (unassigned). For example, this may happen when the planner manually unassigns deliveries from a trip.

You may assign these unplanned deliveries to existing trips or create new trips to accommodate the deliveries.

**Note:** This is an exception type for which Oracle Transportation Planning guides you in finding opportunities for exception resolution. See 'System Guided Exception Resolution, page 10-69 for more information.

Selecting a delivery and then the Resolve button prompts you to either assign the delivery to another trip or to perform a quick trip build.

### Exception Details (Unassigned Delivery) Window

Exception Details (Unassigned Deliveries)

Unassigned Deliveries

Delivery	Origin ...	Origin City	Origin State	Destination City	Destination State	Early Ship
1	My Comp...	Pella	IA	Marietta	OH	11-JAN-2006 02:0

Quick Trip Build Assign Delivery Details

—Candidate Trips— Utilization%

Select Analyze to calculate cost impact and exceptions or Add to Trip to assign the selected delivery to a trip.

Trip	Origin Company	Origin City	Origin State	Destination Company	Destination City	Dest
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Select All (U) Map Add to Map Add to Trip (J) Trip Details (K) Analyze

## Unplanned Delivery Lines

### Missing Distance Data

The system generates this exception when the origin-destination combination on any delivery line does not have data in the Oracle Transportation Planning interface table that stores distances and transit times.

Note that, if the profile option MST: Mileage engine available is set to no, the system will not generate this exception.

When this exception occurs, you may want to check the address or zip code of the origin and destination facilities on the source system. You must correct the information and ensure that the distance and transit time information gets populated in the table. Note that the distance and transit times are typically populated by the distance determining software you install. See "Truckload Distance and Transit Time With Distance Software, page 4-38 and "Truckload Distance and Transit Time Without Distance Determining Software, page 4-45 for more information.

### Exception Details (Missing Distance Data) Window

Delivery Line	Delivery	Source	Order	Order Line	Origin Facility	Origin	Origin
215060	2	OE	68788	9	SD_Denver_SD_Denver	My Comp...	Denver
215060	2	OE	68788	9	SD_Denver_SD_Denver	My Comp...	Denver
215062	1	OE	68789	9	SD_Denver_SD_Denver	My Comp...	Denver
215062	1	OE	68789	9	SD_Denver_SD_Denver	My Comp...	Denver

Facility Calendar    Delivery Details    Order Details

### Infeasible Piece Dimension

The Infeasible Piece Dimension exception is triggered if, for a delivery line, the dimensions of a single piece are too big to fit inside any vehicle or through any vehicle door.

Consider the internal length, width, and height dimensions of the vehicle to be  $V_L$ ,  $V_W$ ,  $V_H$  respectively and that of the piece to be  $P_L$ ,  $P_W$ , and  $P_H$  respectively.

Let  $V_1 = \text{Max} \{V_L, V_W, V_H\}$  [ $V_1$  = longest dimension of the vehicle]

$V_3 = \text{Min} \{V_L, V_W, V_H\}$  [ $V_3$  = shortest dimension of the vehicle]

$V_2$  = second longest dimension of the vehicle

Similarly,  $P_1 = \text{Max} \{P_L, P_W, P_H\}$  [ $P_1$  = longest dimension of the piece]

$P_3 = \text{Min} \{P_L, P_W, P_H\}$  [ $P_3$  = shortest dimension of the piece]

$P_2$  = second longest dimension of the piece

The system generates this exception when  $P_1$  is greater than  $V_1$  or  $P_2$  is greater than  $V_2$  or  $P_3$  is greater than  $V_3$ . Note that the planning engine ignores any restrictions on the orientation of the piece; for example, 'this side up' specifications.

When you encounter a dimension exception, you may need to have the shipment re-packaged or to arrange special transportation for the over-sized piece.

### Exception Details (Infeasible Piece Dimension) Window

Delivery Line	Delivery	Order	Order Line	Origin Facility	Origin Company	Origin
186143	820	57536	1	Seattle Manufacturing...	My Company	Seattle

Facility Calendar   Delivery Details   Order Details

### Infeasible Piece Weight or Volume

The system generates this exception if the delivery line consists of a package or pallet or contains an item with a quantity of one unit and the total weight or cube of the delivery line exceeds the largest capacity of any vehicle type. Note that in the case of a single piece, pallet, or package, the planning engine cannot split the element into smaller portions. This delivery line remains unplanned. Note that this is an audit exception before plan run and is in the Unplanned Delivery Lines exception group after the plan run.

When you encounter a Infeasible Piece Weight or Volume exception for a piece or package, you may need to have the shipment repackaged or to arrange special transportation for the over-sized piece.

### Exception Details (Infeasible Piece Weight or Volume) Window

Delivery Line	Delivery	Order	Order Line	Origin Facility	Origin Company	Origin
186143	820	57536	1	Seattle Manufacturing...	My Company	Seattle

Facility Calendar   Delivery Details   Order Details

#### Weight or Volume Exception for a Delivery Line

The system triggers this exception for a delivery line in the following situations:

- Audit exception: This exception is an audit exception for a delivery line with quantity greater than one unit and whose total weight or cube exceeds the largest capacity of any vehicle type.
- Plan run exception: This exception is a plan run exception for a delivery line with quantity greater than one unit and whose total weight or cube exceeds the largest capacity of any vehicle type. Note that after the plan run, this exception is grouped under Trip and Order Exceptions.

When you encounter a weight or volume exception for a delivery line, you may want to have the delivery line split on the source system.



### Exception Details (Weight or Volume Exception for a Delivery Line) Window

Delivery Line	Delivery	Order	Order Line	Origin Facility	Origin Company	Origin
177823		55238	1	PM-Knoxville_PM-Kn...	My Company	Kn...

### Infeasible Firm Delivery Weight or Volume

The system generates this exception if a firm delivery: Contents Firm or Routing and Contents firm, is too big to fit into the largest vehicle available.

To avoid a Infeasible Firm Delivery Weight or Volume exception, you may want to have the delivery unfirmed on the source system.

### Exception Details (Infeasible Firm Delivery Weight or Volume) Window

Delivery Line	Delivery	Order	Order Line	Origin Facility	Origin Company	Origin
186121	7	57510	2.1	SD_Confectionery_S...	My Company	Rec...

## Exception Messages

The following table presents the short exception messages displayed by Oracle

Transportation Planning when you manually modify a plan.

Exception Group	Exception Type	Exception Messages
Late and Early Exceptions	Planned Late Delivery	<p>Delivery line &lt;delivery line&gt; delivered late by &lt;severity&gt; hrs.</p> <p>Example: Delivery line 1234 delivered late by 4.0 hrs.</p>
Late and Early Exceptions	Planned Early Delivery	<p>Delivery line &lt;delivery line&gt; delivered early by &lt;severity&gt; hrs.</p> <p>Example: Delivery line 2345 delivered early by 3.0 hrs.</p>
Late and Early Exceptions	Planned Late Ship	<p>Delivery line &lt;delivery line&gt; shipped late by &lt;severity&gt; hrs.</p> <p>Example: Delivery line 1234 shipped late by 0.5 hrs.</p>
Late and Early Exceptions	Planned Early Ship	<p>Delivery line &lt;delivery line&gt; shipped early by &lt;severity&gt; hrs.</p> <p>Example: Delivery line 1234 shipped early by 2.5 hrs.</p>
Late and Early Exceptions	Past Due Order	None
Late and Early Exceptions	Insufficient Transit Time	None
Trip and Order Exceptions	Carrier Rule Violation - Distance	<p>Trip &lt;Trip&gt; (&lt;carrier&gt; &lt;origin city&gt;-&lt;destination city&gt;) violates carrier rules - distance: Total distance &lt;distance&gt; vs. max &lt;maximum distance&gt; &lt;distance uom&gt;; distance per day &lt;distance in 24 hours&gt; vs. max &lt;max distance in 24 hours&gt; &lt;distance uom&gt;</p> <p>Example:</p> <p>Trip 12089 (Carrier ABC San Francisco-Boston) violates carrier rules - distance: Total distance 1200 vs. max 1000 mls; distance per day 500 vs max 350 mls</p>

Exception Group	Exception Type	Exception Messages
Trip and Order Exceptions	Carrier Rule Violation - Time	<p>Trip &lt;Trip&gt; (&lt;carrier&gt; &lt;origin city&gt;-&lt;destination city&gt;) violates carrier rules:</p> <p>Total time &gt; max (&lt;time&gt; vs. &lt;maximum&gt; hrs).</p> <p>Example: Trip 12089 (Carrier ABC San Francisco-Boston) violates carrier rules:</p> <p>Total time &gt; max (6 vs. 5 hrs).</p>
Trip and Order Exceptions	Carrier Rule Violation - Stops	<p>Trip &lt;Trip&gt; (&lt;carrier&gt; &lt;origin city&gt;-&lt;destination city&gt;) violates carrier rules:</p> <p>Number of stops &gt; max (&lt;stops&gt; vs. &lt;maximum&gt;).</p> <p>Example: Trip 12089 (Carrier ABC San Francisco-Boston) violates carrier rules:</p> <p>Number of stops &gt; max (8 vs. 6).</p>
Trip and Order Exceptions	Carrier Rule Violation - Interspersed Pickups and Drop-Offs	<p>Trip &lt;Trip&gt; (&lt;carrier&gt; &lt;origin city&gt;-&lt;destination city&gt;) interspersed pick-ups and drop-offs - not allowed.</p> <p>Example: Trip 12089 (Carrier ABC San Francisco-Boston) interspersed pick-ups and drop-offs - not allowed.</p>
Trip and Order Exceptions	Carrier Rule Violation - Continuous Move	<p>Continuous move &lt;continuous move&gt; (&lt;carrier&gt;) exceeds max deadhead distance &lt;Trip1 destination city&gt; - &lt;Trip2 origin city&gt; (&lt;actual deadhead distance&gt; vs. &lt;max deadhead distance&gt; &lt;distance uom&gt;).</p> <p>Example: Continuous move 43234 (Carrier XYZ) exceeds max deadhead distance Baltimore - Cleveland (1350 vs. 1200 mls).</p>

Exception Group	Exception Type	Exception Messages
Trip and Order Exceptions	Empty Trips	<p>Trip &lt;Trip&gt; &lt;origin city&gt;-&lt;destination city&gt; is empty.</p> <p>Example: Trip 1234 Boston-New York is empty.</p>
Trip and Order Exceptions	Dead Stops	<p>Trip &lt;Trip&gt; stop &lt;stop sequence&gt; at &lt;stop city&gt; has no activity.</p> <p>Example: Trip 2346 stop 6 at Wichita has no activity.</p>
Trip and Order Exceptions	Inconsistent Planned and Required Transit Times	<p>Trip &lt;Trip&gt; incorrect transit time &lt;origin city&gt; - &lt;destination city&gt; (&lt;planned transit time&gt; vs. &lt;required transit time&gt; hrs).</p> <p>Example: Trip 4567 incorrect transit time San Francisco - Chicago (8 vs. 12 hrs).</p>
Trip and Order Exceptions	Hours of Service Violation	<p>Trip &lt;Trip&gt; violates layover rules: driving &lt;driving time&gt; vs. max &lt;allowed driving time&gt; hrs.; duty &lt;duty time&gt; vs. max &lt;allowed duty time&gt; hrs.; layover &lt;layover time&gt; vs. required &lt;minimum layover length&gt; hrs.</p> <p>Example: Trip 235 violates layover rules: driving 12 vs. max 10 hrs.; duty 17 vs. max 15 hrs.; layover 7 vs. required 8 hrs.</p>
Trip and Order Exceptions	Ship Set Violation	<p>Violation of ship set &lt;ship set&gt;.</p> <p>Example: Violation of ship set 12345.</p>
Trip and Order Exceptions	Arrival Set Violation	<p>Violation of arrival set &lt;arrival set&gt;.</p> <p>Example: Violation of arrival set 12345.</p>
Trip and Order Exceptions	Item-Mode Incompatibility	<p>Trip &lt;trip&gt;: &lt;incompatible item description&gt; not allowed via &lt;mode&gt;.</p> <p>Example: Trip 9876: ice cream, chocolate, half-gallon tub not allowed via LTL.</p>

Exception Group	Exception Type	Exception Messages
Trip and Order Exceptions	Item-Carrier Incompatibility	<p>Trip &lt;trip&gt;: &lt;incompatible item description&gt; not allowed via &lt;carrier&gt;.</p> <p>Example: Trip 9876: glass window 3' x 9' not allowed via UPS.</p>
Carrier Exceptions	Carrier Vehicle Availability Exceeded	<p>Carrier &lt;carrier&gt; vehicle &lt;vehicle type&gt; availability exceeded for &lt;lane&gt;: &lt;Trips&gt; Trips assigned vs. &lt;vehicle availability&gt; available.</p> <p>Example: Carrier XYZ vehicle 53DV availability exceeded for California - Texas: 25 Trips assigned vs. 20 available.</p>
Carrier Exceptions	Carrier Commitment Underutilization	<p>Commitment to carrier &lt;carrier&gt; in lane &lt;lane&gt; for &lt;start date to end date&gt; missed by &lt;shortfall&gt;%.</p> <p>Example: Commitment to carrier JB Hunt in lane California â Texas for 10-May-2005 to 17-May-2005 missed by 11%.</p>
Timing Exceptions	Facility Calendar Violation	<p>Trip &lt;Trip&gt; violates days/hours of operation at &lt;facility description&gt;.</p> <p>Example: Trip 9865 violates days/hours of operation at KM store 57.</p>
Timing Exceptions	Insufficient Stop Time	<p>Trip &lt;Trip&gt; has insufficient stop time at &lt;facility description&gt;: &lt;stop time&gt; vs. &lt;required stop time&gt; hrs. required.</p> <p>Example: Trip 2378 has insufficient stop time at Store 1203: 1.5 vs. 3.0 hrs required.</p>
Timing Exceptions	Insufficient Connect Time	<p>Delivery line &lt;delivery line&gt;: time between Trips &lt;Trip1&gt; and &lt;Trip2&gt; at &lt;facility description&gt;: &lt;connect time&gt; &lt;required connect time&gt; hrs. required.</p> <p>Example: Delivery line 23987: time between Trips 92784 and 10923 at Carrier ABC's Denver Hub: 5.0 &lt; 6.0 hrs. required.</p>

Exception Group	Exception Type	Exception Messages
Timing Exceptions	Continuous Move Improperly Timed	<p>Continuous move &lt;continuous move&gt; improperly timed between Trips &lt;Trip1&gt; and &lt;Trip2&gt;.</p> <p>Example: Continuous move 002 improperly timed between Trips 12001 and 12002.</p>
Timing Exceptions	Ship Window Violating Facility Calendar	None
Timing Exceptions	Delivery Window Violating Facility Calendar	None
Timing Exceptions	Carrier Facility Appointment Violation	<p>Trip &lt;trip&gt; violates carrier &lt;carrier&gt; appointment window at &lt;facility description&gt;.</p> <p>Example: Trip 9865 violates carrier Schneider appointment window at KM store 57.</p>
Cost Exceptions	Lower Cost Carrier Available	<p>Trip &lt;Trip&gt; (&lt;carrier&gt;, &lt;origin city&gt;-&lt;destination city&gt;) has a lower cost carrier available: &lt;low cost carrier&gt; @ &lt;lower cost carrier cost&gt; vs. &lt;cost&gt;.</p> <p>Example: Trip 12010 (Carrier XYZ, Alameda-Houston) has a lower cost carrier available: Carrier ABC @ \$615 vs. \$790.</p>
Cost Exceptions	Layover Charges Incurred	<p>Trip &lt;Trip&gt; incurs layover charges.</p> <p>Example: Trip 12011 incurs layover charges.</p>

Exception Group	Exception Type	Exception Messages
Vehicle Exceptions	Overutilized Vehicle	<p>Trip &lt;Trip&gt; exceeds vehicle capacity: cube &lt;peak cube&gt;/&lt;max cube&gt; &lt;cube uom&gt; (&lt;peak cube % utilization&gt; - vehicle size &lt;physical capacity&gt; &lt;cube uom&gt;)); weight &lt;peak weight&gt;/&lt;max weight&gt; &lt; weight uom&gt; (&lt;peak weight % utilization&gt;); pallets &lt;peak pallets&gt;/&lt;max pallets&gt; (&lt;peak pallet % utilization&gt;).</p> <p>Example: Trip 12013 exceeds vehicle capacity: cube 3,100/2,850 ft3 (109% - vehicle size 3000 ft3); weight 49,000/41,000 lbs. (120%); pallets 27/28 (96%).</p>
Vehicle Exceptions	Underutilized Vehicle	<p>Trip &lt;Trip&gt; underutilized: cube &lt;peak cube&gt;/&lt;max cube&gt; &lt;cube uom&gt; (&lt;peak cube % utilization&gt;); weight &lt;peak weight&gt;/&lt;max weight&gt; &lt; weight uom&gt; (&lt;peak weight % utilization&gt;); pallets &lt;peak pallets&gt;/&lt;max pallets&gt; (&lt;peak pallet % utilization&gt;).</p> <p>Example: Trip 12013 underutilized: cube 2,100/2,850 ft3 (74%); weight 19,000/41,000 lbs. (46%); pallets 16/28 (57%).</p>
Vehicle Exceptions	Item-Vehicle Incompatibility	<p>Load &lt;load&gt;: &lt;incompatible commodity item description&gt; not allowed via &lt;vehicle type&gt;.Load 9876: ice cream, chocolate, half-gallon tub not allowed via 53DV.</p>
Facility Exceptions	Facility Dock Capacity Exceeded	<p>Dock capacity of &lt;facility description&gt; exceeded.</p> <p>Example: Dock capacity of Athens store exceeded.</p>
Facility Exceptions	Facility Handling Capacity Exceeded	<p>Volume capacity of &lt;facility description&gt; exceeded.</p> <p>Example: Volume capacity of Miami store exceeded.</p>

Exception Group	Exception Type	Exception Messages
Facility Exceptions	Facility - Vehicle Incompatibility	<p>Trip &lt;Trip&gt;: &lt;vehicle type&gt; not allowed at &lt;facility description&gt;.</p> <p>Example: Trip 9876: 53DV not allowed at Ala Moana Store.</p>
Facility Exceptions	Pool Facility - Carrier Incompatibility	<p>Trip &lt;Trip&gt;: &lt;carrier&gt; is incorrect line haul or local carrier for &lt;facility description&gt;.</p> <p>Example: Trip 2304: Carrier ABC is incorrect line haul or local carrier for Stonier Provo Pool.</p>
Facility Exceptions	Missing Latitude and Longitude	None
Facility Exceptions	Facility - Mode Incompatibility	<p>Trip &lt;trip&gt;: &lt;mode&gt; not allowed at &lt;facility description&gt;.</p> <p>Example: Trip 9876: LTL not allowed at Main Factory.</p>
Facility Exceptions	Facility - Item Incompatibility	<p>Trip &lt;trip&gt;: &lt;incompatible item description&gt; not allowed at &lt;facility description&gt;.</p> <p>Example: Trip 9876: propane gas, drum not allowed via Con-Way Southeast Pool.</p>
Facility Exceptions	Facility - Facility Incompatibility	<p>Delivery &lt;delivery&gt;: Cannot serve &lt;end facility name&gt; via &lt;intermediate facility name&gt;.</p> <p>Example: Delivery 1234: Cannot serve XZMart_1234 via TNT-Houston_hub.</p>
Trading Partner Exceptions	Unused Drop Trailer Opportunity	<p>&lt;Facility description&gt; of &lt;customer or supplier name&gt; has a drop trailer violation on Trip &lt;Trip&gt; with carrier &lt;carrier&gt;.</p> <p>Example: Store 12456 of ABC Inc has a unused drop trailer opportunity on Trip 12020 with Carrier XYZ.</p>



Exception Group	Exception Type	Exception Messages
Trading Partner Exceptions	Trading Partner - Carrier Incompatibility	<p>Trip &lt;Trip&gt;: &lt;carrier&gt; not allowed at &lt;trading partner&gt;, &lt;facility description&gt;.</p> <p>Example: Trip 9876: Carrier ABC not allowed at Company X's Store 3394.</p>
Trading Partner Exceptions	Customer - Customer Incompatibility	<p>Trip &lt;Trip&gt;: goods of customers &lt;customer1&gt; and &lt;customer2&gt; cannot ship together.</p> <p>Example: Trip 9876: goods of customers ABC and XYZ cannot ship together.</p>

## System Guided Exception Resolution

Oracle Transportation Planning offers support for the resolution of critical exceptions. The exception resolution process leads you through a wizard approach for identifying opportunities to eliminate an exception. The exceptions that have a wizard-based resolution process are listed in the following section. Each of the corresponding Exception Details windows has a Resolve button or other button, such as Reassign, Change Carrier, and Quick Trip Build, that enables the resolution process.

In using the exception resolution functionality, note the following:

- If the trip resulting in an exception is Routing and Contents Firm, then the Resolve, Re-assign, or Change Carrier functionality is not available for the trip.
- If the trip resulting in an exception is Routing Firm and the delivery is Routing and Contents Firm, then the Resolve, Re-assign, or Change Carrier functionality is not available for the trip.
- If the trip resulting in an exception is Routing Firm and if selecting Resolve, Re-assign, or Change Carrier causes any change in mode, carrier, service, or vehicle type, then these functions are not available for the trip.

The following sections discuss, in detail, the different steps involved in the exception resolution process.

### Resolution of Exceptions

The following table summarizes the different exception resolution options supported by Oracle Transportation Planning.

Exception Type	Resolve Options
Overutilized Vehicle	<p>Selecting a delivery and then clicking the Reassign button on the Exception Details window opens the Find Opportunities window with the following options:</p> <ol style="list-style-type: none"> <li>1. Find an existing trip to assign this delivery to: Enter the utilization factor for the relevant vehicle. Existing trips that qualify appear in the Alternative Trips block in the Exception Details window.</li> <li>2. Create a new trip and assign this delivery: The system automatically creates a direct trip from the delivery's origin to its destination and assigns the delivery to this trip.</li> </ol>
Customer - Customer Incompatibility	<p>Selecting a delivery and then clicking the Reassign button on the Exception Details window opens the Find Opportunities window with the following options:</p> <ol style="list-style-type: none"> <li>1. Find an existing trip to assign this delivery to: Enter the utilization factor for the relevant vehicle. Existing trips that qualify appear in the Alternative Trips block in the Exception Details window.</li> <li>2. Create a new trip and assign this delivery: The system automatically creates a direct trip from the delivery's origin to its destination and assigns the delivery to this trip.</li> </ol>
Underutilized Vehicle	<p>Selecting a trip and then clicking the Resolve button opens the Find Opportunities window. Enter the utilization factor for the under-utilized vehicle and find deliveries, less-than-truckloads, or parcels to add to the under-utilized trip. The shipments that qualify appear in the Candidate Shipments block of the Exception Details window.</p>
Unassigned Deliveries	<ol style="list-style-type: none"> <li>1. Selecting an unassigned delivery and then clicking the Assign button opens the Find Opportunities window. Enter the utilization factor for the vehicle and find an existing trip to assign this delivery to. The resulting trips appear in the Candidate Trips block of the Exception Details window.</li> <li>2. Selecting an unassigned delivery and then clicking the Quick Trip Build button creates a direct trip from the delivery's origin to its destination and assigns the delivery to the trip.</li> </ol>

Exception Type	Resolve Options
Carrier Vehicle Availability Exceeded	<p>Selecting a delivery and then clicking the Reassign button on the Exception Details window opens the Find Opportunities window with the following options:</p> <ol style="list-style-type: none"> <li>1. Find an existing trip to assign this delivery to: Enter the utilization factor for the relevant vehicle. Existing trips that qualify appear in the Alternative Trips block in the Exception Details window.</li> <li>2. Create a new trip and assign this delivery: The system automatically creates a direct trip from the delivery's origin to its destination and assigns the delivery to this trip.</li> </ol>
Lower Cost Carrier Available	Selecting a trip and then clicking the Resolve button initiates cost and exception calculations. When the calculations are completed, the available lower cost carriers appear in the Alternative Carriers block of the Exception Details window.
Facility - Vehicle Incompatibility	Selecting a facility and then clicking the Resolve button initiates cost and exception calculations. When the calculations are completed, the available alternatives appear in the Alternatives block of the Exception Details window.
Pool Facility - Carrier Incompatibility	Selecting a facility and then clicking the Change Carrier button initiates cost and exception calculations. When calculations are completed, the Confirm: Change Carrier, Service, Vehicle Type window appears showing the carriers before and after the change. Clicking OK changes the carrier.
Trading Partner - Carrier Incompatibility	Selecting a trip and then clicking the Resolve button initiates cost and exception calculations. When the calculations are completed, the available lower cost carriers appear in the Alternative Carriers block of the Exception Details window.

For detailed instructions on basic tasks involved in the system-guided exception resolution process, see 'Modifying and Improving Plans, page 12-1. The tasks include:

- Changing the carrier for a trip
- Assigning a delivery to an existing trip
- Assigning a delivery to a new trip (quick trip building)



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## The Planner Workbench

This chapter covers the following topics:

- Overview of the Planner Workbench
- Using the Planner Workbench Navigator
- Personal and Public Queries
- Intelligent Window Display
- Advanced Window Controls
- Map View
- The Planner Workbench Toolbar
- Menu Options Available by Right-Clicking Tree Nodes

### Overview of the Planner Workbench

The Planner Workbench in Oracle Transportation Planning enables you to view and manipulate transportation plans graphically, monitor key performance indicators, and rapidly resolve exceptions, all from a single, integrated portal.

The Planner Workbench includes a navigation tree that lets you drill down to specific data. The navigation tree offers a hierarchical representation of plan information such as plan names, trips (truckload, less-than-truckload, and parcel), continuous moves, trip legs, trip stops, deliveries, orders, facilities, and carriers.

The Planner Workbench also includes Personal and Public Queries that enable you to define, copy, save, or execute predefined search criteria (queries) against transportation plan data, using a number of selection options and sorting criteria.

Two navigation levels are available on the Planner Workbench: Standard and Advanced. You can toggle from Standard to Advanced navigation by enabling and disabling Advanced Window Controls at any time while on the Planner Workbench. Advanced Window Controls include automated window closing and jump back capability.

The Planner Workbench also provides conceptual representations of plan elements on a map. The Planner Workbench provides various map-based interactive editing tools to facilitate graphical manipulation of plan output.

This chapter describes the Oracle Transportation Planning Planner Workbench.

## Using the Planner Workbench Navigator

The Planner Workbench Navigator enables you to drill down to specific data and offers a hierarchical representation of plan information such as plan names, trips, trip legs, stops, deliveries, and orders.

### The Planner Workbench

The screenshot displays the Oracle Transportation Planning Planner Workbench interface. The left pane, titled 'Planner Workbench Navigator', shows a hierarchical tree of plan elements under the 'Plans' tab. The tree is organized by trip, with 'DG-SCTW-7B' selected. The right pane, titled 'Exceptions and Recommendations (DG-SCTW-7B)', shows a summary table of exceptions and a table of recommendations.

**Summary Table:**

Exception Type	Exception Group	Count	Rank
Planned early deliveries	Early and late exceptions	3	2
Planned early ships	Early and late exceptions	3	4
Violation of layover regulation	Trip and order exceptions	2	11
Violation of facility calendar	Timing exceptions	4	17
Under-utilization of vehicle capacity	Vehicle exceptions	2	26

**Recommendations Table:**

Group	Auto Released	Released	Release Failed	Flagged For...	Unreleased
LTs	0	0	0	0	0
Parcels	0	0	0	0	0
Continuous Mov...	0	0	0	0	0
TLs	0	0	0	0	2

The Planner Workbench Navigator facilitates the following functions:

- **Navigation:** You can select a specific plan for which to view plan level information, such as Exceptions, Summary, Performance, and Map. You can find individual nodes, such as specific trips or continuous moves, in the plan by navigating through the tree. You can then view the specific details of these nodes.
- **Views:** You can specify the navigation tree organization using the View by control. You can view a plan in different hierarchical representations including by trip, by order, by facility, by carrier, by customer, by supplier, by unassigned deliveries, and by exceptions. See 'View by Options, page 11-3 for more information.
- **Filters:** You can set bounds on the information displayed in the navigation tree by

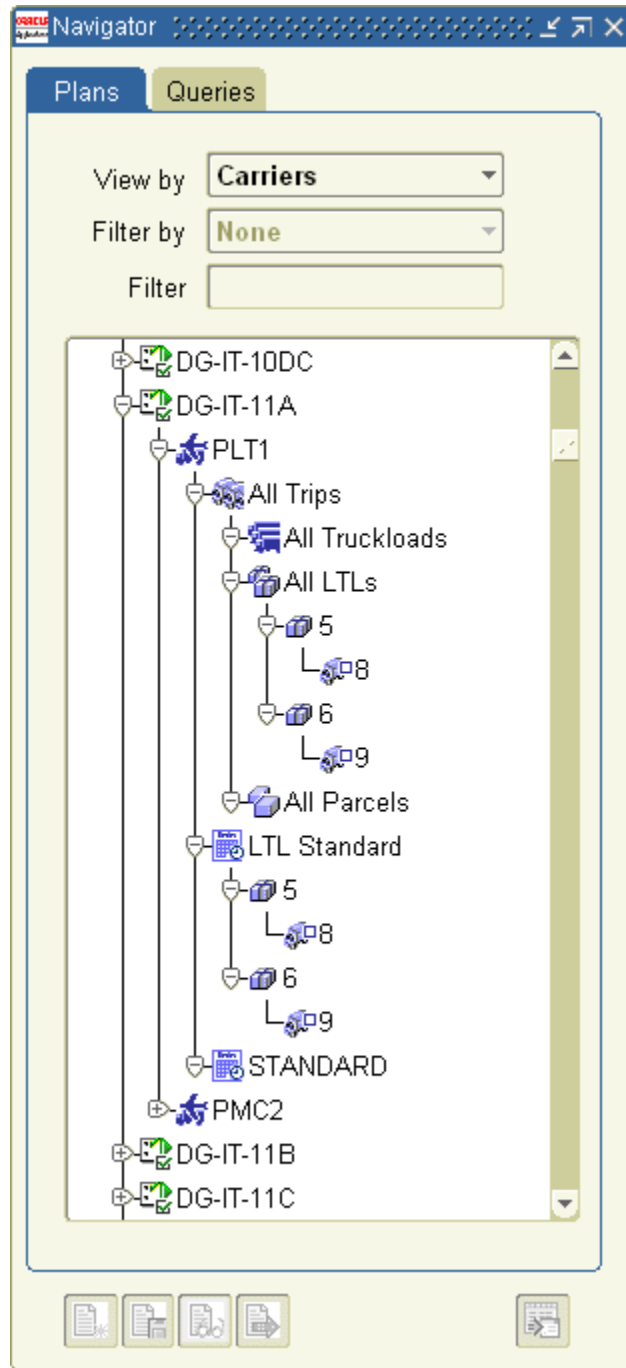
using filters with criteria such as date range or geographical region. You can use the date range for filtering trips or orders with departure within, arrival within, or any overlap with the specified dates. You can also specify a geographical region, such as a zip code, city, state, or country, for filtering trips or orders.

- Right mouse click functions: Each node in the navigation tree provides specific functions when you right-click the node. This enables quick access to such functionality as Details, Exceptions, Performance, Actions, and Release.

## **View by Options**

The Planner Workbench enables you to view plans in different hierarchal representations using the navigation tree.

### Planner Workbench Navigator



The hierarchal navigation tree is viewable in the following hierarchies:

- Carriers
- Customers



- Exceptions
- Facilities
- Orders
- Suppliers
- Trips
- Unassigned Deliveries

You can change between View by options in the View by field on the Navigator pane of the Planner Workbench.

As examples, the following are navigation tree hierarchies for View by Trips and View by Orders.

#### **View by Trips**

Plan

All Trips

All Truckloads

+Truckloads

+Vehicle Trip Legs

+Deliveries

+Vehicle Trip Stops

+Deliveries

All LTLs

+LTLs

+Deliveries

All Parcels

+Parcels

+Deliveries

All Continuous Moves

+Continuous Moves

+Truckloads

+Vehicle Trip Legs

+Deliveries

+Vehicle Trip Stops

+Deliveries

**View by Orders**

Plan

All Orders

+ Orders

+Deliveries

+ Trips (that this delivery is assigned to)

**Planner Workbench Behavior when You Change View by Option**

If you change the View by option, then the navigator tree collapses back to the Plans node. You need to select the plan of interest again if you wish to perform any further tree-based navigation. All the open windows on the Planner Workbench, however, remain open. For example, suppose that you are on View by Trips and the following windows are open.

- Truckload Details
- Stop Details
- Delivery Details

If you now change the View by option to Orders, reselect and re-expand the same plan, select an Order X on the tree, and then right-click the Order X node to select the Order Details option, the Order Details window appears on top of the already open windows. The following windows are now open.

- Truckload Details
- Stop Details
- Delivery Details
- Order Details (Order X)

If you now change the View by to Facilities, reselect and re-expand the same plan, select a facility on the tree, and then right-click the node to select the Facility Details option, the Facility Details window appears on top of the already open windows. The following windows are now open.

- Truckload Details
- Stop Details
- Delivery Details
- Order Details (Order X)

- Facility Details

The Facility Details window shows multiple rows of Orders. If you now select an Order Y on the Facility Details window and click the Order Details button, the system refreshes the previous Order Details window with the Order Y details, which now appears on top. The following windows are now open on the Planner Workbench.

- Truckload Details
- Stop Details
- Delivery Details
- Order Details (Order Y)
- Facility Details

If windows pertaining to a specific plan A are open, and you navigate to and perform any function with a different plan B with Advanced Window Controls enabled, all windows pertaining to plan A that were open on the Planner Workbench close. See 'Advanced Window Controls, page 11-45 for more information.

**Note:** Oracle Transportation Planning assumes that you have navigated to a different plan only if you perform any right-click or top menu functions on that plan or any element of the plan.

Selecting a different plan node on the navigation tree or selecting the plus sign next to a new plan node to expand it does not cause windows related to other plans to close.

## Filters

Filters are sets of defined criteria that allow a planner to sift the navigation tree entities to a limited set without the need for elaborate navigation. Note that filters apply only in the context of a plan. You need to select a plan name and only then is the Filter functionality enabled on the Planner Workbench. The system automatically clears the filter when you select a new plan in the navigation tree.

You can choose the filters in the Filter by field on the Navigator pane of the Planner Workbench. You can apply the following filters:

### None

If this option is selected in the Filter by field, the navigation tree is not filtered by any criteria. The Filter field is disabled. This is also the mechanism for 'un-filtering' the navigation tree. This means that if you have chosen any other Filter previously, but want to return to the complete navigation tree, you must change the Filter by option to None.

## Date

You can specify a date range to narrow down the information displayed on the Planner Workbench tree. You can use the date range for filtering trips or orders with departure within, arrival within, or any overlap with the specified dates.

When you select Filter by Date, the Filter Plan by Date window appears. Enter the Date type and From and To Dates on the window. The Date type options are Departure, Arrival, or Any Overlap. The From date defaults to the plan start date from the plan options and the To date defaults to the plan end date from the plan options. You can change these dates. When you click OK, the Filter field on the Navigator pane of the Planner Workbench shows the date values entered in the filter criteria. You need to refresh the navigation tree to filter trips or orders on the basis of the specified dates and View by option.

The date range filter applies in the following manner depending on the View by option:

- **View by Trips:** The Planner Workbench displays all the trips that meet the date range criterion, that is, all the trips that depart or arrive or are in transit in the date range.
- **View by Carriers:** The navigation tree displays, by carrier, all the trips that meet the date range criterion, that is, all the trips that depart or arrive or are in transit in the date range.
- **View by Customers:** The navigation tree displays, by customer, all the trips that meet the date range criterion, that is, all the trips that depart or arrive or are in transit in the date range. Note that view-by Customer has a drill down of Customer, Customer Facility, Orders, Deliveries, and Trips. The system applies the filter at the trip level and you need to expand the navigation tree to show the resulting trips for this date range.
- **View by Suppliers:** The navigation tree displays, by supplier, all the trips that meet the date range criterion, that is, all the trips that depart or arrive or are in transit in the date range. Note that view-by Supplier has a drill down of Supplier, Supplier Facility, Orders, Deliveries, and Trips. The system applies the filter at the trip level and you need to expand the navigation tree to show the resulting trips for this date range.
- **View by Facilities:** The navigation tree displays, by facility, all the trips that meet the date range criterion, that is, all the trips that depart or arrive or are in transit in the date range.
- **View by Orders:** The navigation tree displays, by order, all deliveries that can depart within, arrive within, or be in transit within the specified date range based on their earliest and latest ship and delivery dates.
- **View by Unassigned Deliveries:** The navigation tree displays all deliveries that can

depart (whose pick-up window overlaps with the date range), arrive (whose delivery window overlaps with the date range), or can be in transit within the specified date range.

- **View by Exceptions:** The navigation tree displays all exceptions that have trips that meet the date range criterion as well as unassigned orders that can depart (whose pick-up window overlaps with the date range) or arrive (whose delivery window overlaps with the date range) within the specified date range.

The following example illustrates the filtering effect on the basis of the date type you select. Suppose that the navigation tree is in a View by Trips perspective and the following trips appear on the tree:

Trip	Planned Departure Date	Planned Arrival Date
A-1	31-Dec-2003	13-Jan-2004
A-2	31-Dec-2003	03-Jan-2004
A-3	28-Dec-2003	31-Dec-2003
A-4	04-Jan-2004	11-Jan-2004
A-5	06-Jan-2004	11-Jan-2004
A-6	02-Jan-2004	04-Jan-2004
A-7	12-Jan-2004	14-Jan-2004

If you select to filter plans by date and specify the date range to be 01-Jan-2004 to 10-Jan-2004, based on the date type selected, the navigation tree displays the following trips:

- **Date type = Any overlap:** The tree displays all trips that have any overlap with the specified dates. That is the tree displays trips that have arrival within, departure within, or in transit dates within the specified dates. In this case, the navigation tree displays trips A-1, A-2, A-4, A-5, and A-6.
- **Date type = Arrival:** The tree displays all trips that have an arrival date overlap within the specified dates. In this case, the tree displays trips A-2 and A-6.
- **Date type = Departure:** The tree displays all trips that have a departure date overlap within the specified dates. In this case, the tree displays trips A-4, A-5, and A-6.

Note: In the above example, trips A-1 through A-7 can be in various modes; truckload,

less-than-truckload, or parcel. Suppose that A-1, A-2, and A-3 are truckload trips; A-4 and A-5 are less-than-truckload trips; and A-6 and A-7 are parcel trips. When you apply the date filter of 01-Jan-2004 to 10-Jan-2004, for date type of Departure, the tree is displayed as follows:

Plans

TP\_Plan\_03

All Loads

All LTLs

A-4

A-5

All Parcels

A-6

**Note:** If you have previously chosen a filter value, but want to change the filter value, you have to clear the existing filter by choosing the filter option None. You can then define the new filter criteria.

## Region

You can specify a geographical region to narrow down the information displayed on the Planner Workbench tree. The region can be a zip code, city, state, or country. For example, if the tree is in a View by Trips perspective and you choose to apply a filter of Region with zip code = 94065, then the navigation tree displays only those trips that have any stop (origin, destination, or intermediate stop) in the zip code 94065.

When you select Filter by Region, the Filter Plan by Region window appears, in which you need to select the filter criteria, such as zip code, city, state, or country, and enter the filter value. The available values for the zip code, city, state, and country are based on the information in the plan. For example, if you select a filter criteria of city, then the list of values for city lists only those cities that appear as origins, destinations, or consolidation or deconsolidation points in the plan.

When you click OK, the Filter field shows the region value entered in the filter criteria and the tree appears filtered on the basis of the specified region and View by option.

Note that when you choose the region type as City, the list of values lists the city name followed by state and country.

The region filter applies in the following manner depending on the View by option:

Note that stop, in this section, refers to origin, destination, or intermediate stop.

- View by Trips: The tree displays all the trips that have any stop in the specified region.

- View by Carriers: The tree displays, by carrier, all the trips that have any stop in the specified region.
- View by Customers: The navigation tree displays, by customer, all the trips that have any stop in the specified region. Note that View-by Customer has a drill down of Customer, Customer Facility, Orders, Deliveries, and then Trips. The system applies the filter at the trips level and you can expand the navigation tree to show the resulting trips for this region.
- View by Suppliers: The tree displays, by supplier, all the trips that have any stop in the specified region. Note that View-by Supplier has a drill down of Supplier, Supplier Facility, Orders, Deliveries, and then Trips. The system applies the filter at the trips level and you can expand the navigation tree to show the resulting trips for this region.
- View by Facilities: The tree displays, by facility, all the trips that have any stop in the specified region.
- View by Orders: The tree displays all the orders that have delivery lines that have an origin or a destination in the specified region.
- View by Unassigned Deliveries: The tree displays all the unassigned deliveries that have an origin or a destination in the specified region.
- View by Exceptions: The tree displays all exceptions that have trips with any stop in the specified region, as well as unassigned deliveries that have an origin or a destination in the specified region.

**Note:** If you have previously chosen a filter value, but want to change the filter value, you have to clear the existing filter by choosing the filter option None. You can then define the new filter criteria.

## Personal and Public Queries

Oracle Transportation Planning includes Personal and Public Queries that enable you to define, copy, save, or execute defined search criteria against transportation plan data. You can use different selection options and sorting criteria. For example, a query can show all the trips specific to a customer and in a certain geographical region. The Query functionality enables the planner to make a direct, targeted selection of data as opposed to expanding the navigation tree sequentially.

- Search for trips, continuous moves, orders, and exceptions based on specific criteria
- Search for the above based on user-defined rules

Either type of search produces a comprehensive list of results that you can use as a starting point for drill downs. Furthermore, various actions can work on the results of such queries. The list of actions that can be applied to the result items varies with the type of entity involved.

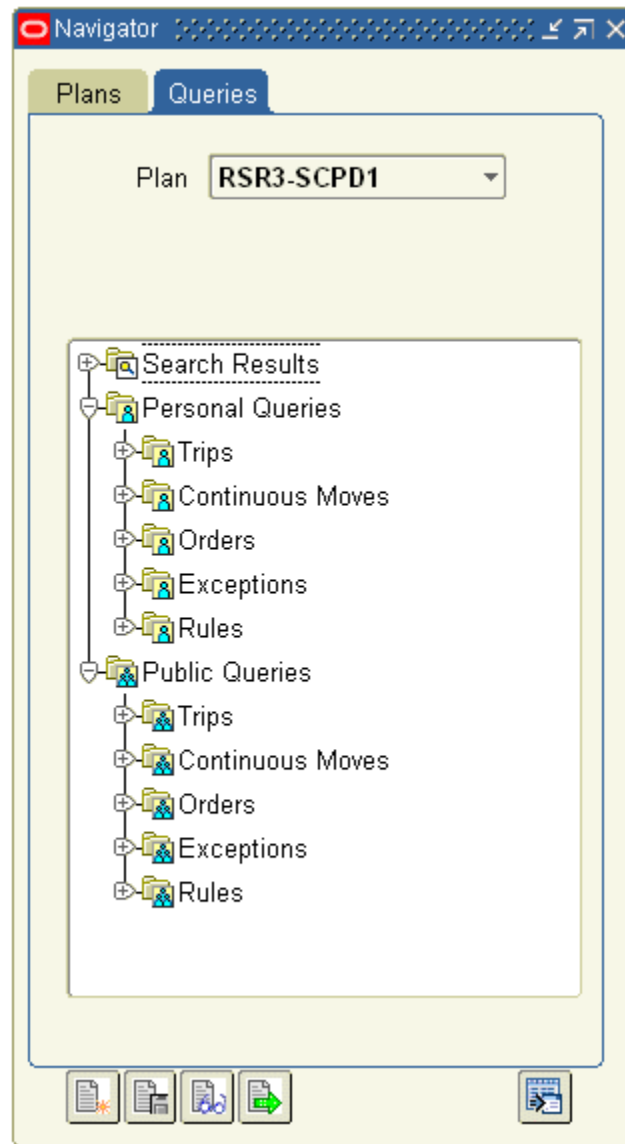
You can save, delete, and rename queries. Personal and Public folders enable planners to execute the same query repeatedly without having to redefine it. After you execute and save queries, you can store the results in Folders.

Two types of Folders are available: Personal, which are visible only to the users that define them, and Public, which are visible to all the users of the Planner Workbench. Both Public and Personal folders have sub-folders for Trips, Orders, Continuous Moves, Exceptions, and Rules. The system automatically saves a query in a specific sub-folder based on the query type.

You can access the Query functionality including Create Query, Save Query, View Query, and Execute Query on the Queries tab of the Planner Workbench Navigator.



### Planner Workbench Queries Tab



The following sections explain the Query functionality.

## Creating a New Query

Use the following procedure to create a new query.

To create a new query:

1. Click the Create Query icon at the bottom of the Queries tab of the Planner Workbench Navigator. The Create Query window opens.

- If the query type is not known when you invoke the Create Query action, then the system opens the query window for Trips. You can change the query type.

If you have entered some criteria under one query type and have saved the query, you cannot choose another query type for the same query. You can only change query description and query type to public or private.

### Create Query Window

2. Enter a name for the new query. For a new query, the name must be unique within the public or private queries for a user.

Public queries are those queries that you save within the Public folder and are visible to all the users of the Planner Workbench. Private queries are those you store in the Private folder and are visible only to the person who creates the query.

The system automatically populates the Owner field with the user's login name.

3. Select Yes or No in the Public field. Yes indicates that this is a public query. No indicates that it is a private query. By default, this option is set to Yes.
4. Select the Query Type from among Trips, Continuous Moves, Orders, Exceptions, and Rules.
5. Enter the search criteria as explained in the following sections.

- 'Search Criteria for Trips, page 11-15
- 'Search Criteria for Continuous Moves, page 11-18
- 'Search Criteria for Orders, page 11-20
- 'Search Criteria for Exceptions, page 11-23
- 'Search by Rules, page 11-25

**Note:** The value for the search criteria is automatically set to All. If you are entering this value manually, please ensure that this word is spelled as All with A in upper case.

6. Save the query. The saved query appears in the relevant sub-folder within Personal Queries or Public Queries on the Planner Workbench Navigator.

You can save a query in several ways:

- Use the Save button in the Create Query window. If you have not entered a name, the system prompts you to enter name and description in the same window.
- Click the Query Save icon at the bottom of the Queries tab in the Navigation window. If you have entered a query name in the Create Query window, then the system saves the query under that name. If the query name has not been entered, the system prompts you to enter the necessary information.
- If you execute another query or select the Plan tab on the Planner Workbench Navigator and have not saved the query, the Save Query window appears. You have the choice to either save the query or to cancel it.

## Search Criteria

The following sections discuss the criteria you can specify to search for trips, continuous moves, orders, and exceptions.

### Search Criteria for Trips

The planner can search for trips based on the following criteria. Note that the list of values listed for each search criterion includes the values as per the most recent data snapshot.

### Create Query Window, Query Type: Trips

**Create Query**

Query Name:  Owner:  Public:

Query Type:

**Mode**

All ☐ Trip Numbers:

Truckloads ☐ ☐ Trips in Continuous Moves only

LTLs ☐

Parcels ☐

**Other Search Criteria**

☐ User Edits only

**From**  **Range**

Facilities:  Zip:  City:  State:  Country:

**Destination Range**

Facilities:  Zip:  City:  State:  Country:

Carriers:  Cost:

Customers:  Weight:

Suppliers:  Cube:

Utilization:   %

Time to Departure:

- **Mode:** The Mode region enables specification of any combination of modes: Truckload, Less-than-Truckload, or Parcel.
- **Trip Numbers:** You can specify trip number within any mode. You can search for all the trips, for a specific trip number, or multiple trip numbers. You must enter multiple trip numbers separated by semi-colons; for example, 1;2;3;4.
- **Trips in Continuous Moves only:** For truckloads, you can limit the search to only those trips in continuous moves. If you select this check box, the system returns only those trips that match the rest of the search criteria and are in continuous moves. If you do not select the check box, then the system returns all the trips that match the other search criteria, regardless of whether or not the trips are in continuous moves.
- **User Edits only:** Select this check box to limit the search results to trips that were manually edited after the trips were produced by the optimization engine or by a quick trip build. By default, the check box is not selected.
- **Geographical location of the trip:** You can specify the following geographical

criteria to find trips.

- Trips from a certain location
- Trips to a certain location
- Trips From or To a certain location.
- Trips between specific From - To locations: This is equivalent to searching for trips on a specific origin-destination lane. Note that the fields under the Destination Range are enabled only if this option is selected.

You can specify the following for an origin or a destination location. You can select single, multiple, or a range of entities from the corresponding list of values.

- Facility
- Zip Code
- City
- State
- Country

To select multiple values, select one value, hold down the Ctrl key, and select the additional values. To select a range, select the first value, then hold down the Shift key and select the other range limit.

The default value for these fields is All.

If you specify multiple origins and multiple destinations in the From-To fields, then the system searches for trips on all possible lanes. For example, if you specify the origin to be San Francisco or San Jose and the destination to be New York or Los Angeles, then the system searches for the trips on the lanes San Francisco - New York, San Francisco - Los Angeles, San Jose - New York, and San Jose - Los Angeles.

- Carriers: You can select single or multiple carriers. The default value for this field is All.
- Customers: You can select single or multiple customers. The default value for this field is All.
- Suppliers: You can select single or multiple suppliers. The default value for this field is All.

You choose the condition less than, greater than, equal to, or between and enter a value in the following fields:

- Cost
- Weight
- Cube
- Utilization
- Time to Departure

For example, if you specify cost between \$3000 and \$5000, then the system displays all trips costing from \$3000 to \$5000. If you specify weight greater than 3000 Lbs, then the system finds all trips carrying a weight greater than 3000 Lbs. If you enter 2 days in the Time to Departure field, the system finds all trips with a time to depart less than 2 days.

You can search on any combination of the above criteria. For example, you can search all truckload trips on the lane Texas to California with cost greater than \$20,000 and time to depart less than 3 days, being shipped to customers ABC or XYZ by carriers P or Q.

The successful execution of a Trips query results in a work list of trips. The default sort for the trip search results is ascending order of trip number. You can sort the results in ascending or descending order on any of the other fields displayed. The linked trip number and carrier values enable you to access the corresponding Trip Details and Carrier Summary windows.

#### **Search Criteria for Continuous Moves**

The planner can search for continuous moves based on the following criteria. Note that the list of values listed for each search criterion includes values from the most recent data snapshot.

### Create Query Window, Query Type: Continuous Moves

The screenshot shows the 'Create Query' window with the title 'Create Query Window, Query Type: Continuous Moves'. The window has a yellow background and a blue title bar. At the top, there are fields for 'Query Name' (containing 'Example:Continu'), 'Owner' (containing 'CINDY'), and 'Public' (a dropdown menu set to 'Yes'). Below these is a 'Query Type' dropdown menu set to 'Continuo...'. The main area is divided into two sections: '-Main-' and '-Other Search Criteria-'. In the '-Main-' section, there is a 'Continuous Move Numbers' field with a dropdown menu set to 'All' and a checked checkbox for 'Continuous Moves'. In the '-Other Search Criteria-' section, there is a checked checkbox for 'User Edits Only', a 'Carriers' dropdown menu set to 'All', and two rows of search criteria. The first row is for 'Cost' with a dropdown menu set to 'Between', a text field containing '5000', and another text field containing '10000'. The second row is for 'Time to Departure' with a dropdown menu set to 'Less Than', a text field containing '15', and a dropdown menu set to 'Ho...'. At the bottom of the window, there are five buttons: 'Save', 'Save As', 'Delete', 'Clear', and 'Execute'.

- Continuous Move Numbers: You can choose to search for all the continuous moves, for a specific continuous move number, or for specific multiple continuous move numbers. To enter multiple continuous move numbers, separate them with semi-colons; for example, 1;2;3;4.
- User Edits only: You can select this check box to limit the search results to continuous moves that were edited after they were produced by the optimization engine. By default, this check box remains deselected.
- Carrier: This field enables you to specify search criteria by carriers. For example, you can search for all continuous moves by Carrier XYZ. You can select single, multiple, or a range of carriers from the carriers list of values.

To select multiple values, select a value, hold down the Ctrl key and select the different values. To select a range, select the first value, then hold down Ctrl and Shift keys together and select the other range limit.

In the following two fields, you can choose a condition such as less than, greater than, equal to, or between and then enter a value.

- Cost
- Time to Departure

For example, if you specify cost greater than \$3000, then the system finds all continuous moves costing more than \$3000. If you specify continuous moves with a time to depart less than 2 days, the system finds all continuous moves that have less than two days left to begin

You can search on any combination of the above criteria. For example, you can find all continuous moves with cost greater than \$2500 and time to depart less than 3 days using carriers ABC or DEF.

The result of the successful execution of a continuous move query is a work list showing the continuous move number, carrier, cost, and time to departure of each retrieved continuous move.

The default sort of the work list is ascending order of continuous move number. You may sort in ascending or in descending order of any of the other fields displayed by clicking the work list header.

The Continuous Move Number and Carrier field values are linked and provide access to the Continuous Move Details window and Carrier Summary window respectively.

#### **Search Criteria for Orders**

You can search for orders based on the following criteria. Note that the list of values for each search criterion includes the values from the most recent data snapshot.



### Create Query Window, Query Type: Orders

Query Name: **Example: Orders** Owner: **CINDY** Public: **No**

Query Type: **Orders**

**—Orders—**

Source Order Type: **All**

Sales Orders ☐ Order Numbers: **OE:55675;OE:55676;OE:55677;OE:55679;OE:55681;OE:55686;OI**

Purchase Orders ☐

Other Orders ☒

**—Other Search Criteria—**

From **From** Range **Range** Destination Range **Destination Range**

Facilities **AD-Atlanta, GA\_AD-Atlanta:AD** Facilities **All**

Zip **00090:00100:00195:00213:00830** Zip **All**

City **All** City **All**

State **All** State **All**

Country **All** Country **All**

Items **All** Weight **Less Than** **3000**

Customers **All** Cube **Greater T...** **250**

Suppliers **All**

Buttons: **Save** **Save As** **Delete** **Clear** **Execute**

- Source Order Type: Specify one of the order types, such as sales orders, purchase orders, and other orders.
- Order Numbers: You can choose to search for all the orders of the indicated source type, a specific order number, a range of order numbers, or for multiple orders. Use the list of values to specify the multiple values or range of values.

To select multiple values, select a value, hold down the Ctrl key and select the different values. To select a range, select the first value, then hold down the Shift key and select the other range limit.

- Geographical location of the order: Specify geographical criteria to find orders that have delivery lines with the following criteria:
  - Orders from a certain location
  - Orders to a certain location
  - Orders from or to a certain location

- Orders between specific From - To locations

This is equivalent to searching for trips on a specific origin-destination lane.

Note that the fields under the Destination Range are enabled only if this option is selected.

- You can specify the following for an origin or a destination location. You can select single, multiple, or a range of entities from the corresponding list of values.

- Facility
- Zip code
- City
- State
- Country

To select multiple values, select a value, hold down the Ctrl key and select the different values. To select a range, select the first value, then hold down the Shift key and select the other range limit.

If you do not specify any values for these fields, the system defaults the value All to these fields.

- Items: You can select single or multiple items. The default value for this field is All.
- Customers: You can select single or multiple customers. The default value for this field is All.
- Suppliers: You can select single or multiple suppliers. The default value for this field is All.

In the following fields, you can choose a condition such as less than, greater than, equal to, or between and enter a value.

- Weight
- Cube

For example, if you specify weight greater than 3000 Lbs, then the system returns all orders with a weight greater than 3000 Lbs. If you specify cube less than 2000 ft<sup>3</sup>, then the system retrieves all orders with a volume less than 2000 ft<sup>3</sup>.

You can search on any combination of the above criteria. For example, you can search for all sales orders in the range A-100 to A-150 for the items Doors or Windows, for customers PQR or LMN, from distribution centers D1 or D2.

Order number, source order type (Sales Order/Purchase Order/ Other), and trading

partner (customer or supplier) are displayed by default on the results work list.

The default sort is ascending order of order number. You can sort in ascending or descending order of any of the other fields displayed in the results work list.

The Order Number field value is linked and provides access to the Order Details window.

### Search Criteria for Exceptions

You can search for exceptions in the following ways. Note that the list of values for each search criterion includes the values from the most recent data snapshot.

#### Create Query Window, Query Type: Exceptions

The screenshot shows the 'Create Query' window with the title 'Create Query' and a subtitle 'Create Query Window, Query Type: Exceptions'. The window contains the following fields and controls:

- Query Name:** A text box containing 'Example: Excepti'.
- Owner:** A text box containing 'CINDY'.
- Public:** A dropdown menu set to 'No'.
- Query Type:** A dropdown menu set to 'Exceptions'.
- Main Section:**
  - Exception Types:** A checkbox labeled 'Exception Types' is checked. To its right is a text box labeled 'Exception Types'.
- Other Search Criteria Section:**
  - Truckloads:** A checked checkbox.
  - Parcels:** An unchecked checkbox.
  - Deliveries:** A checked checkbox.
  - LTLs:** A checked checkbox.
  - Continuous Moves:** An unchecked checkbox.
- Facilities:** A text box containing 'ALMANDO CRUZ\_3413;ALRICK'.
- Carriers:** A text box containing 'ASDFA'.
- Customers:** A text box containing 'All'.
- Suppliers:** A text box containing 'All'.
- Exception Count:** A dropdown menu set to 'Greater Than' and a text box containing '5'.
- Exception Status:** A text box containing 'Action taken'.

At the bottom of the window are five buttons: 'Save', 'Save As', 'Delete', 'Clear', and 'Execute'.

- **Exception Type:** Specify the exception type you want to search for. You can search for all exception types, a specific exception type, multiple exception types, or a range of exception types.

To select multiple values, select a value, hold down the Ctrl key and select the different values. To select a range of exception types listed one after another in alphabetical order, select the first value, then hold down the Shift key and select the last in the range. Note that you may sort the exception types in alphabetical order by clicking the list of values header.

- You can search for exceptions associated with trips in Truckload, Less-than-Truckload, or Parcel modes or with deliveries or continuous moves. By default, all these options are selected. If you deselect all the options, the system issues a warning asking you to specify at least one entity type.

You can specify the following as search criteria. You can select a single entity, multiple entities, or a range of entities from the corresponding list of values.

To select multiple values, select one value, hold down the Ctrl key and select the additional values. To select a range of values listed one after another in alphabetical order, select the first value, then hold down the Shift key and select the last in the range. Note that you may sort the values in alphabetical order by clicking the list of values header.

- Facilities
- Carriers
- Customers
- Suppliers
- Exception Count: You can choose a condition such as less than, greater than, equal to, or between and enter an exception count. For example, if you specify count greater than 10, then the system finds all exception types that have counts greater than 10.
- Exception Status: Specify the status of exception types you want to search for. For example, you can search for all exceptions in the Escalated status. You can select All, None, a range, or multiple statuses from the list of values.

To select multiple values, select one value, hold down the Ctrl key and select the additional values. To select a range of values listed one after another in alphabetical order, select the first value, then hold down the Shift key and select the last in the range. Note that you may sort the values in alphabetical order by clicking the list of values header.

You can search on a combination of any of the above criteria. For example, you can find exceptions of the type Carrier vehicle availability exceeded for truckload trips by carriers ABC or XYZ to customers P and Q.

By default, the query results for exceptions show the Exception Group, Exception Type, Count, and Rank.

The default sort is ascending order of exception type. You can also sort the results in ascending or descending order of any of the other fields in the work list.

The Exception Type and Exception Count fields are linked and provide access to the Exception Details window.

## Search by Rules

You can search for various plan elements by specifying rules as described in the following tables. Note that each list of values include values from the most recent data snapshot.

### Create Query Window, Query Type: Rules

Query Name:  Owner:  Public:

Query Type:

**Applies to**

- ☒ Trips
- ☐ Orders
- ☐ Continuous Moves
- ☐ Unassigned Deliveries

**Criteria**

- ☒ Match All
- ☐ Match Any

Active Flag	Criteria	Condition	From	To
<input checked="" type="checkbox"/>	Origin City	Equals	Baltimore	
<input type="checkbox"/>		Equals		
<input type="checkbox"/>				
<input type="checkbox"/>				
<input type="checkbox"/>				
<input type="checkbox"/>				
<input type="checkbox"/>				
<input type="checkbox"/>				
<input type="checkbox"/>				
<input type="checkbox"/>				

Buttons: Save, Save As, Delete, Clear, Execute

You can specify that the query must return Trips, Orders, Continuous Moves, or Unassigned Deliveries. You can define rule conditions and can set each one to be active or inactive. The planning system considers only the active conditions while executing the Query. In addition, if you define a number of rule conditions, you can query for items either matching all conditions or matching any condition. For example, if you have defined 10 conditions, you can find elements to which all 10 conditions apply or to which any of the 10 conditions apply individually.

The following table discusses the conditions applicable to trips.

Criteria	Condition	From	To
----------	-----------	------	----

Criteria	Condition	From	To
Mode	Equals, is not	Truckload, Less-than-Truckload, Parcel	--
In Continuous Move	Equals	Yes, No	--
Trip Number	Equals, Among, Is between	Trip number list of values	If condition is between, you can enter a value from the trip number list of values.
Customer	Equals, Is not, Among, Like	Customer list of values	--
Supplier	Equals, Is not, Among, Like	Supplier list of values	--
Facility	Equals, Is not, Among, Like	Facility list of values	--
Carrier	Equals, Is not, Among, Like	Carrier list of values	--
Cost	Equals, Is less than, Is at most, Is at least, Is greater than, Is between.	Enter a value	If condition is between, you can enter a value.
Weight	Equals, Is less than, Is at most, Is at least, Is greater than, Is between	Enter a value	If condition is between, you can enter a value.
Cube	Equals, Is less than, Is at most, Is at least, Is greater than, Is between	Enter a value	If condition is between, you can enter a value.
Utilization	Equals, Is less than, Is at most, Is at least, Is greater than, Is between	Enter a value	If condition is between, you can enter a value.

<b>Criteria</b>	<b>Condition</b>	<b>From</b>	<b>To</b>
Time to Depart	Equals, Is less than, Is at most, Is at least, Is greater than, Is between	Enter a value	If condition is between, you can enter a value.
Circuitry	Equals, Is less than, Is at most, Is at least, Is greater than, Is between	Enter a value	If condition is between, you can enter a value.
Origin Facility	Equals, Among, Is not, Like	Facility list of values	--
Origin Zip	Equals, Among, Is not, Between, Like	Zip Code list of values	If condition is between, you can enter a value.
Origin City	Equals, Among, Is not, Like	City list of values	--
Origin State	Equals, Among, Is not, Like	State list of values	--
Origin Country	Equals, Among, Is not, Like	Country list of values	--
Destination Facility	Equals, Among, Is not, Like	Facility list of values	--
Destination Zip	Equals, Among, Is not, Between, Like	Zip Code list of values	If condition is between, you can enter a value.
Destination City	Equals, Among, Is not, Like	City list of values	--
Destination State	Equals, Among, Is not, Like	State list of values	--
Destination Country	Equals, Among, Is not, Like	Country list of values	--

The following table discusses the conditions applicable to continuous moves.

<b>Criteria</b>	<b>Condition</b>	<b>From</b>	<b>To</b>
Continuous Move Number	Equals, Is between, Among, Is not	Continuous Move Number list of values	If condition is between, then enter a value from Continuous Move Number list of values.
Carrier	Equals, Is not, Among, Like	Carrier list of values	--
Cost	Equals, Is less than, Is at most, Is at least, Is greater than, Is between	Enter a value	If condition is between, you can enter a value.
Time to Depart	Equals, Is less than, Is at most, Is at least, Is greater than, Is between	Enter a value	If condition is between, you can enter a value.

The following table discusses the conditions applicable to orders.

<b>Criteria</b>	<b>Condition</b>	<b>From</b>	<b>To</b>
Source Order Type	Equals, Is not, Among, Like	Purchase Order, Sales Order, Other	--
Order Number	Equals, Is between, Among	Order Number list of values	If condition is between, then enter a value from the Order Number list of values.
Item	Equals, Is not, Among, Like, Between	Item list of values	If condition is between, then enter a value from the Item list of values.
Customer	Equals, Is not, Among, Like	Customer list of values	--



Criteria	Condition	From	To
Supplier	Equals, Is not, Among, Like	Supplier list of values	--
Facility	Equals, Is not, Among, Like	Facility list of values	--
Weight	Equals, Is less than, Is at most, Is at least, Is greater than, Is between	Enter a value	If condition is between, you can enter a value.
Cube	Equals, Is less than, Is at most, Is at least, Is greater than, Is between	Enter a value	If condition is between, you can enter a value.
Origin Facility	Equals, Among, Is not, Like	--	--
Origin Zip	Equals, Among, Is not, Between, Like	Zip Code list of values	If condition is between, you can enter a value.
Origin City	Equals, Among, Is not, Like	City list of values	--
Origin State	Equals, Among, Is not, Like	State list of values	--
Origin Country	Equals, Among, Is not, Like	Country list of values	--
Destination Facility	Equals, Among, Is not, Like	--	--
Destination Zip	Equals, Among, Is not, Between, Like	Zip Code list of values	If condition is between, you can enter a value.
Destination City	Equals, Among, Is not, Like	City list of values	--

<b>Criteria</b>	<b>Condition</b>	<b>From</b>	<b>To</b>
Destination State	Equals, Among, Is not, Like	State list of values	--
Destination Country	Equals, Among, Is not, Like	Country list of values	--

The following table discusses the conditions applicable to unassigned deliveries.

<b>Criteria</b>	<b>Condition</b>	<b>From</b>	<b>To</b>
Delivery Number	Equals, Is between, Among, Like	Delivery Number list of values	If condition is between, then enter a value from the Delivery Number list of values.
Item	Equals, Is not, Among, Like, Between	Item list of values	If condition is between, then enter a value from the Item list of values.
Customer	Equals, Is not, Among, Like	Customer list of values	--
Supplier	Equals, Is not, Among, Like	Supplier list of values	--
Facility	Equals, Is not, Among, Like	Facility list of values	--
Weight	Equals, Is less than, Is at most, Is at least, Is greater than, Is between	Enter a value	If condition is between, you can enter a value.
Cube	Equals, Is less than, Is at most, Is at least, Is greater than, Is between	Enter a value	If condition is between, you can enter a value.
Origin Facility	Equals, Among, Is not, Like	--	--

Criteria	Condition	From	To
Origin Zip	Equals, Among, Is not, Between, Like	Zip Code list of values	If condition is between, you can enter a value from the Zip Code list of values.
Origin City	Equals, Among, Is not, Like	City list of values	--
Origin State	Equals, Among, Is not, Like	State list of values	--
Origin Country	Equals, Among, Is not, Like	Country list of values	--
Destination Facility	Equals, Among, Is not, Like	--	--
Destination Zip	Equals, Among, Is not, Between, Like	Zip Code list of values	If condition is between, you can enter a value from the Zip Code list of values.
Destination City	Equals, Among, Is not, Like	City list of values	--
Destination State	Equals, Among, Is not, Like	State list of values	--
Destination Country	Equals, Among, Is not, Like	Country list of values	--

The successful execution of a Rules-based query for trips, continuous moves, or orders results in work lists similar to those of the queries corresponding to trips, continuous moves, and orders respectively.

A Rules-based query for Unassigned Deliveries results in a work list showing the Delivery Number, Origin City, Origin State, Destination City, and Destination State.

The default sort is ascending order of Delivery Number.

The Delivery Number field is linked and provides access to the Delivery Details window.

**Note:** The Like condition works as follows:

For example, suppose that the condition you specify to Find a trip is a

customer 'like AB'. The system interprets this as find trips where the customer name 'starts with AB'. The resulting trips can be for customers such as ABC and ABDE.

## Executing a Query

Click Execute at the bottom of the Create Query window to execute a query. You may also select a query on the navigation tree and then click the Execute Query icon at the bottom of the Planner Workbench Navigator to execute the query. See 'Finding an Existing Query, page 11-32 for information on retrieving saved queries.

The execution of a query opens the work list window in the Planner Workbench or replaces the existing work list with the results of the executed query. The Create Query window disappears when the result window appears.

If any query runs for more than 30 seconds, a dialog box appears enabling you to cancel the execution of the query.

## Finding an Existing Query

On the Queries tab, you can either expand the navigation tree to locate your query or click the View Query icon. The list of values shows all existing queries (of all types) along with their types. Select the desired query from the list of values and click OK. This opens the View Query window showing the selected query. You may modify the search criteria or query description and save the query again.

## Deleting an Existing Query

You can delete a query in two ways:

1. Select the query on the navigation tree and then right-click and select the Delete Query option.
2. In the Create Query window showing the query, click Delete. The system generates a warning. Click OK to delete the query.

**Note:** Only the owner of a query can delete a query. If you try to delete a query that you do not own, the system warns you that you do not have privileges to delete the query.

## Managing Queries

After you save and execute a query, the results of the search are stored in folders on the Queries tab in the Planner Workbench Navigator. By default, a new query receives a default name; for example, Query 1 or Query 2. You can change this default name at

any time or can save the query with a specific name before executing that query. To rename a previously saved query, select the query from the Public or Personal folder on the tree and then right-click the node and select Rename. Note that you can only rename queries you own. The system warns you if you attempt to rename a query that you do not own.

You can save an existing query under a different name by choosing the Save As button. A window appears requiring you to enter the new query name, description, and query type (Personal or Public).

The Plan name on the Queries tab indicates the context in which a search was executed.

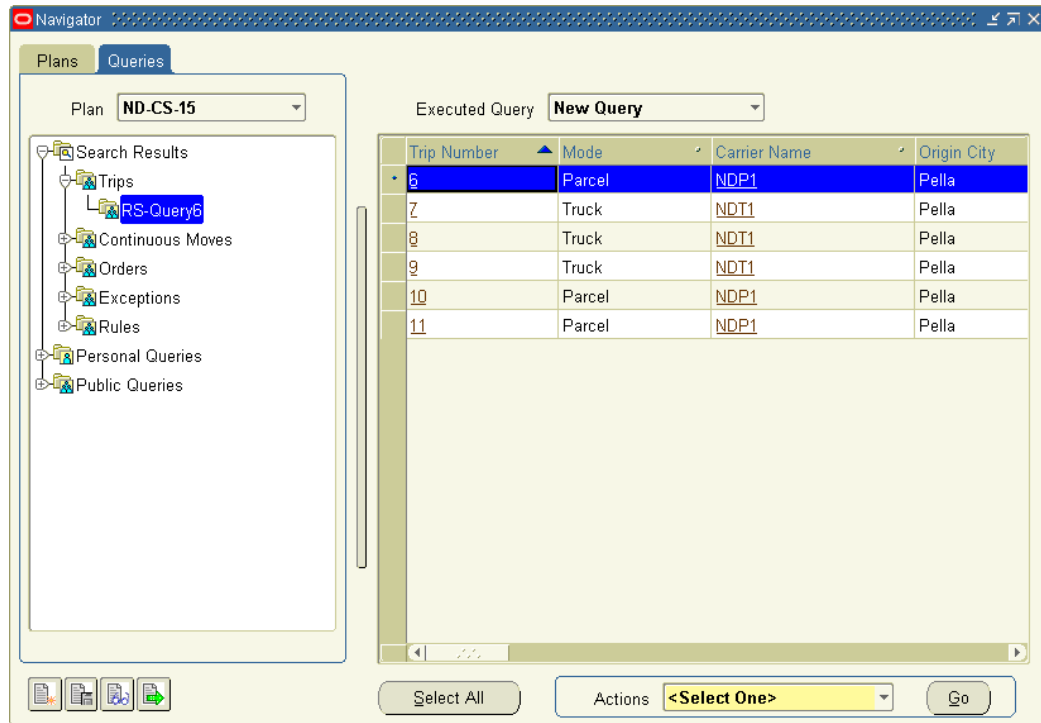
Under the Search Results node on the navigation tree, nodes exist for each executed query. This means that if you select a query from under the Search results node, the Plan field displays the plan for which you executed the query.

These queries are contained within sub-folders under the Search Results node. The sub-folders are Trips, Continuous Moves, Orders, Exceptions, and Rules, based on the type of the queries.

The Query tab navigation tree also consists of the Personal Queries and Public Queries folders. Personal Queries are visible only to the users that define them, while Public Queries are visible to all users of the Planner Workbench. Both Personal and Public folders have sub-folders within them that categorize the queries into Trips, Continuous Moves, Orders, Exceptions, and Rules based on the type of the queries. The system stores the individual queries within these sub-folders.

If you select a query from the Personal or Public Queries folder and then execute the query using the Execute Query icon at the bottom of the Navigator, a list of values appears. You can select a plan from this list of values to run the query against. When you select a plan, the system updates the Plan field on the Queries tab with this Plan name.

### Planner Workbench Queries Tab



The system stores the search results for a particular query against a particular plan and these search results are available over multiple Planner Workbench sessions. This means that you can view the results for a particular query by selecting the query under the Search Results node at any time. Selecting the query changes the value in the Plan field to the Plan name for which the selected query was executed.

For any plan selected in the Plan field of the Queries tab, executed queries are visible in the Executed Query field list of values in the right pane. This right pane appears when you execute a query or invoke the results of a particular query. When changing to a new plan name, the Executed Query list of values does not change even though the queries listed may not have been executed for the newly selected plan. When you now select a query from the Executed Query list of values, the system executes the query against the newly selected plan and from then on caches the query.

Query results will be current only when you re-execute the query. When you re-run a plan, the system erases the query results and the Executed Query list of values. To re-execute a saved query, select the appropriate folder and the bucket within and then right-click the tree node and select Run Query. You can also re-run the query by double-clicking the query or by choosing the Execute Query icon at the bottom of the Planner Workbench Navigator.

If the Queries tab is the default tab specified in your User Preferences, the Planner Workbench opens with both query tree and query results showing.

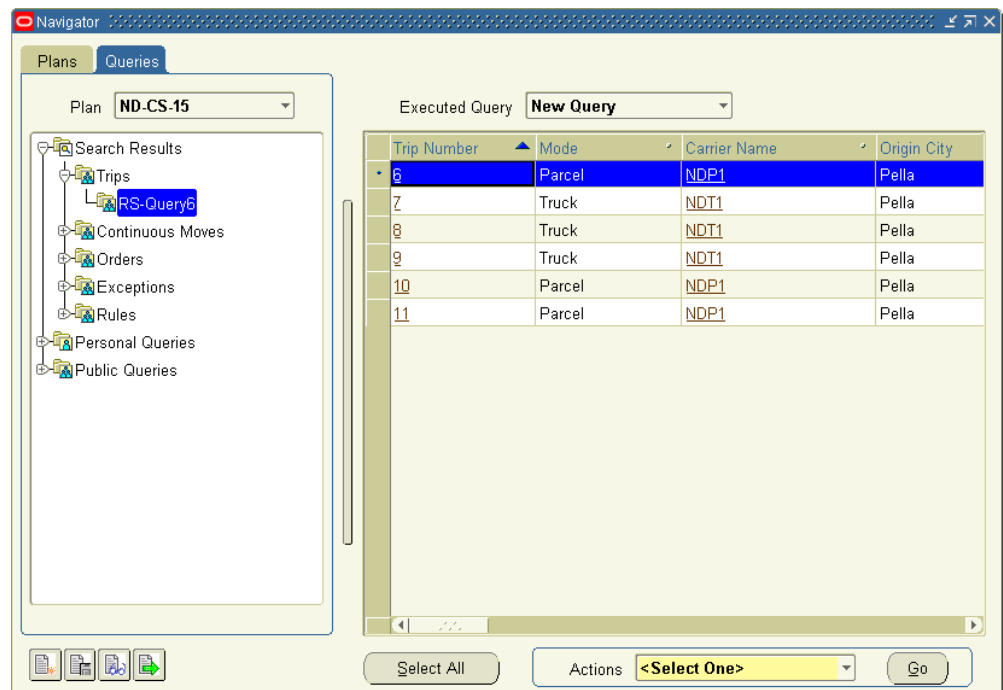
## Actions on Query Results

After a query is executed, it returns a list (or a "worklist") of matching elements that you can perform various actions on. Use the following procedure to run an action on a worklist element.

### Run an action on a worklist element

1. Select one or more plan elements that you have queried on the worklist.

#### Planner Workbench Queries Tab



2. Select an action to perform on the selected element(s) in the Actions field. You can perform any of the following actions, depending on the plan element type.
  - If the selected plan element is a trip or continuous move, the following actions are available.
    1. Exceptions: You can view a summary listing for the exceptions pertaining to the selected trip or continuous move.
    2. Map: You can open a new map window with the selected trip or continuous move plotted on it.
    3. Add to Map: You can add the selected trips or continuous moves to an already open map window. If no map window is open, this action will

open a new map window with the selected trip or continuous move plotted on it.

4. Release: You can launch a release process for the selected trip or continuous move.
  5. Flag for Release: You can flag the selected trip or continuous move to release at a later date.
- If the selected plan element is an unassigned delivery, the following actions are available.
    1. Map: You can open a new map window with the selected unassigned deliveries plotted on it.
    2. Add to Map: You can add the selected unassigned deliveries to an already open map window. If no map window is open, this action will open a new map window with the selected unassigned deliveries plotted on it.
  - If the selected plan element is an order, you can view a summary listing for the exceptions pertaining to the selected order.
  - There are no actions available if the selected plan element is an exception.

**Note:** Click on **Select All** to select all of the plan elements in the worklist.

3. Click on **Go**. The system proceeds from the Queries window to the corresponding window where you can complete the selected action.

## Intelligent Window Display

The following scenarios exist for window display on the Planner Workbench.

1. Opening of multiple instances of Truckload Details, LTL Details, Parcel Details, and Continuous Move Details windows:

Oracle Transportation Planning enables you to specify your preference with regard to opening of multiple instances of the same window on the planner workbench. This applies to Truckload Details, Less-than-Truckload Details, Parcel Details, and Continuous Move Details windows only. You have the following choices to select from during set up. For more information, see 'General User Preferences Setup, page 5-18.

- Reuse when open: If you have a particular window open, for example,



Truckload Details, and you then open the same window for another similar entity (a truckload in this example), the system refreshes the existing open window with the new information. In this example, the system refreshes the existing open Truckload Details window with the details of the newly selected truckload.

- Always open new: If you have a particular type of window open and you then open Details for another entity of the same type, an additional separate window opens up. Up to four windows of the same type may be open. If four windows of the same type are already open and you try to view the details of another entity of the same type, the system refreshes the window that was first open with the details of the newly selected entity.
  - Open based on pushpin check box: The Truckload Details, LTL Details, Parcel Details, and Continuous Move Details windows have a pushpin on the top right corner. If you open a particular window, select the pushpin and open another window of the same type, the second window opens up as a separate window. If you do not select the pushpin, then selecting a second window of the same type refreshes the existing open window with the new information.
2. Opening of multiple windows of window types other than Truckload Details, LTL Details, Parcel Details, or Continuous Move Details:

For windows other than Truckload Details, LTL Details, Parcel Details, and Continuous Move Details, invoking the same type of window always refreshes the previously open window.

The following example illustrates this window behavior.

On the Planner Workbench Navigator, choose View by Orders and on the tree, expand a Plan node and select the All Orders node. Then, right-click the All Orders node and select the All Orders Summary option. This opens the All Orders window.

On the All Orders window, select an order and click Order Details. This opens the Order Details window showing details of the selected order.

If you now select another Order on the All Orders window and click the Order Details button, the system refreshes the Order Details window with the second order's details. The windows that are now open are the All Orders window and the Order Details window. This holds true even if you select another Order from the tree and then select the Order Details option by right-clicking the Order node.

3. Opening of windows of different types:

Windows of different types, that is, windows with different window names always open separately on the Planner Workbench.

The following example illustrates this window behavior.

Choose View by Trips and on the navigation tree, expand a Plan node and then the All Trips node. Select the All Truckloads node and then right-click and select the All Truckloads Summary option. This opens the All Truckloads Summary window.

Select a truckload and click the Trip Details button. This opens the Truckload Details window. The windows now open are All Truckloads Summary and Truckload Details.

On the left navigation tree, under the All Trips node, expand the All LTLs node and select an LTL. Now right-click the LTL node and select the LTL Details option. This opens the LTL Details window.

The windows now open are All Truckloads Summary, Truckload Details, and LTL Details. The following table summarizes this example.

Step	Navigation Path	Windows Open
1	View by Trips > Plan node > All Trips node > All Truckloads node > right-click menu option All Truckloads Summary	1. All Truckloads Summary
2	On All Truckloads Summary window, select Truckload > Trip Details	1. All Truckloads Summary 1. Truckload Details
3	Under same plan node, All Trips node > All LTLs node > LTL > right-click menu option LTL Details	1. All Truckloads Summary 1. Truckload Details 1. LTL Details

Now suppose that you choose View by Trips and on the tree, expand a Plan node and then the All Trips node. Select the All Truckloads node and then right-click the node and select the All Truckloads Summary option. This opens the All Truckloads Summary window.

On the All Truckloads Summary window, select a truckload ABC and then click Trip Details. This opens the Truckload Details window for truckload ABC. On this Truckload Details window, select a stop A and click the Stop Details button. The Stop Details window for stop A appears on top of the Truckload Details window.

On the Stop Details window, select a delivery 123 and click the Delivery Details button. The Delivery Details window for delivery 123 appears on top of the Stop Details window.

The windows now open are the All Truckloads Summary, Truckload Details, Stop Details, and Delivery Details windows.

Now, on the Delivery Details window, select a delivery leg and click the Trip Details button. The delivery legs are available on the Itinerary tab in the Delivery Content and Itinerary block of the Delivery Details window. The Trip Details button is the icon available beside the Trip field on the Load Summary region of the Delivery Details window.

Choosing the Trip Details button causes the Planner Workbench to behave as follows:

- If the trip is the same truckload ABC, for which Truckload Details is already open, the Truckload Details window for truckload ABC remains open and appears on top of the Delivery Details window. The windows that remain open are All Truckloads Summary, Truckload Details, Stop Details, and Delivery Details windows.
- If the trip is a truckload other than ABC, the system refreshes the Truckload Details window with the new truckload's details. The system refreshes the existing open window only if you have set up the system to do so. The windows that now remain open are All Truckloads Summary, Truckload Details, Stop Details, and Delivery Details.
- If the trip is a less-than-truckload or parcel trip, a new window, LTL Details or Parcel Details, appears on top of the Delivery Details window. Windows now open are All Truckloads Summary, Truckload Details, Stop Details, Delivery Details, and LTL Details or Parcel Details.

The following table summarizes this example.

Step	Navigation Path	Windows Open
1	View by Trips > Plan node > All Trips node > All Truckloads > right-click menu option All Truckloads Summary	1. All Truckloads Summary
2	On the All Truckloads Summary window, select Truckload ABC > Trip Details	1. All Truckloads Summary 1. Truckload Details (ABC)

Step	Navigation Path	Windows Open
3	On the Truckload Details window, select Stop > Stop Details	1. All Truckloads Summary  1. Truckload Details  1. Stop Details
4	On the Stop Details window, select Delivery > Delivery Details	1. All Truckloads Summary  1. Truckload Details  1. Stop Details  1. Delivery Details

Step	Navigation Path	Windows Open
5	On the Delivery Details window, Itinerary tab > Delivery Leg > Trip Details (Load Summary region)	<p>If trip is the same as truckload ABC (truckload first selected):</p> <ol style="list-style-type: none"> <li>1. All Truckloads Summary</li> <li>1. Truckload Details (ABC)</li> <li>1. Stop Details</li> <li>1. Delivery Details</li> </ol> <p>If trip is different from truckload ABC (for example, truckload XYZ):</p> <ol style="list-style-type: none"> <li>1. All Truckloads Summary</li> <li>1. Truckload Details (XYZ)</li> <li>1. Stop Details</li> <li>1. Delivery Details</li> </ol> <p>If trip is a less-than-truckload or parcel:</p> <ol style="list-style-type: none"> <li>1. All Truckloads Summary</li> <li>1. Truckload Details (ABC)</li> <li>1. Stop Details</li> <li>1. Delivery Details</li> </ol>

Step	Navigation Path	Windows Open
		1. LTL Details/Parcel Details

## Closing of Windows

If you have not enabled advanced navigation, you need to manually close each open window on the Planner Workbench or use the Tools menu option Close All Windows. The Close All Windows option in the Tools menu enables you to close all windows open on the Planner Workbench with one click, rather than having to close each window separately.

If you have enabled advanced navigation, any time you close a window manually, the system automatically closes all of its descendant windows. See 'Advanced Window Controls, page 11-45 for more information.

## Exceptions Windows

The following example illustrates the behavior of windows relating to exceptions.

Select a Plan node on the navigation tree and then right-click the node to select the Exceptions option. This opens the Exceptions and Recommendations window (Window I) with counts of exceptions by exception type. Select an exception type A and click Details to view the Exception Details window (Window II). This window shows the individual exceptions within exception type A.

In the Exception Details window (Window II), select an exception A1 and click Related Exceptions. Note that not all exception types have related exceptions. For more information, see 'Related Exceptions, page 10-15. This opens the Related Exceptions window (Window III) for exception A1. In the Related Exceptions window, select an exception type X and click the Details button. This opens the Exception Details window (Window IV) for the selected related exception type X.

If you next select a different exception type on the Related Exceptions window (Window III), the system refreshes the subsequent Exception Details window (Window IV). This is true for both standard and advanced navigation. The Exceptions and Recommendations window (Window I) and its descendant Exception Details window (Window II) remain open.

If you select a different exception A2 on the Exception Details window (Window II) and you click the Related Exceptions button, the system refreshes the Related Exceptions window (Window III). This is true for both standard and advanced navigation. For more information, see 'Advanced Window Controls, page 11-45. In the case of standard navigation, the related Exception Details window (Window IV) remains open; in

advanced navigation, this window automatically closes.

If you select a different exception type B on the Exceptions and Recommendations window (Window I) and then click the Details button, the Exception Details window (Window II) refreshes showing exceptions of the new exception type B. In the case of standard navigation, the Related Exceptions window (Window III) and the subsequent Exception Details window (Window IV) remain open. In advanced navigation, these two windows automatically close.

The following table summarizes this example.

Step	Navigation Path	Windows Open
1	Plan node > right mouse click option Exceptions	<ul style="list-style-type: none"><li>• Exceptions and Recommendations (Window I)</li></ul>
2	On Exceptions and Recommendations window (Window I), select exception type A > Details	<ul style="list-style-type: none"><li>• Exceptions and Recommendations (Window I)</li><li>• Exception Details (Window II) showing details of exception type A</li></ul>
3	On Exception Details window (Window II), select exception A1 > Related Exceptions	<ul style="list-style-type: none"><li>• Exceptions and Recommendations (Window I)</li><li>• Exception Details (Window II) showing details of exception type A</li><li>• Related Exceptions (Window III) showing related exception types for exception A1</li></ul>

Step	Navigation Path	Windows Open
4	On Related Exceptions window (Window III), select exception type X > Details	<ul style="list-style-type: none"> <li>• Exceptions and Recommendations (Window I)</li> <li>• Exception Details (Window II) showing details of exception type A</li> <li>• Related Exceptions (Window III) showing related exception types for exception A1</li> <li>• Exception Details (Window IV) showing details of related exception type X</li> </ul>
5	On Related Exceptions window (Window III), select exception type Y > Details	<ul style="list-style-type: none"> <li>• Exceptions and Recommendations (Window I)</li> <li>• Exception Details (Window II) showing details of exception type A</li> <li>• Related Exceptions (Window III) showing related exception types for exception A1</li> <li>• Exception Details (Window IV) refreshes with details of exception type Y</li> </ul>



Step	Navigation Path	Windows Open
6	On Exception Details window (Window II), select exception A2 > Related Exceptions	<ul style="list-style-type: none"> <li>• Exceptions and Recommendations (Window I)</li> <li>• Exception Details (Window II) showing details of exception type A</li> <li>• Related Exceptions (Window III) refreshes with related exception types for exception A2</li> <li>• If Advanced Window Controls is enabled, window IV closes</li> <li>• If Advanced Window Controls is not enabled, window IV with details of exception type Y remains open</li> </ul>
7	On Exceptions and Recommendations window (Window I), select exception type B > Details	<ul style="list-style-type: none"> <li>• Exceptions and Recommendations (Window I)</li> <li>• Exception Details (Window II) refreshes with details of exception type B</li> <li>• If Advanced Window Controls is enabled, windows III and IV close</li> <li>• If Advanced Window Controls is not enabled, windows III and IV remain open showing related exception types for exception A2 and details of related exception type Y</li> </ul>

## Advanced Window Controls

Advanced window control features in Oracle Transportation Planning include automated window closing and jump back capability. Use the Enable Advanced Window Controls check box in the Tools menu to enable or disable this feature. For more information on enabling Advanced Window Controls, see Planner Workbench Preferences on page ---

## Automated Window Closing

The Advanced Navigation features on the Planner Workbench enable automatic closing of windows when several windows are open on the workbench. Each time a new user workflow is started, this feature closes all previously open windows except Map and Performance windows. If the Advanced Window Controls feature is disabled, each open window on the planning workbench must be closed manually. For example, if you open the Summary or Exception windows for the following nodes on the navigation tree, all previously open windows close, with the exception of the Map and Performance windows.

- Plan
- All Trips
- All Orders
- All Facilities

If you have not enabled Advanced Window Controls, each open window on the planning workbench must be closed manually.

For example, on the navigation tree, select the All Truckloads node for a plan. Now right-click the All Truckload node and select the All Truckloads Summary option. The All Truckloads Summary window opens.

Select a specific truckload ABC and click the Trip Details button. The Truckload Details window for ABC opens on top of the All Truckloads Summary window.

Enable Advanced navigation and then select the Plan Summary node from the navigation tree. The Plan Summary window opens. All the other windows, that is, All Truckloads Summary and Truckload ABC Details windows, close.

## Jump Back

Advanced Navigation includes a feature called Jump Back, called through an icon on the top right corner of each plan output window. If you select the jump back icon on a window X, the system displays a list of all precedent windows, which are in the same chain of drill-downs as the window X. If you select a window Y on this list of windows, window Y appears on top. All windows that are descendants of the window Y in the drill-down chain close, including the window X on which you selected the jump back icon. Any windows that are precedents of the window Y in the chain remain open.

For example, suppose that you opened the following windows on the workbench in this order:

1. All Truckloads Summary
2. Truckload Details

### 3. Stop Details

### 4. Delivery Details

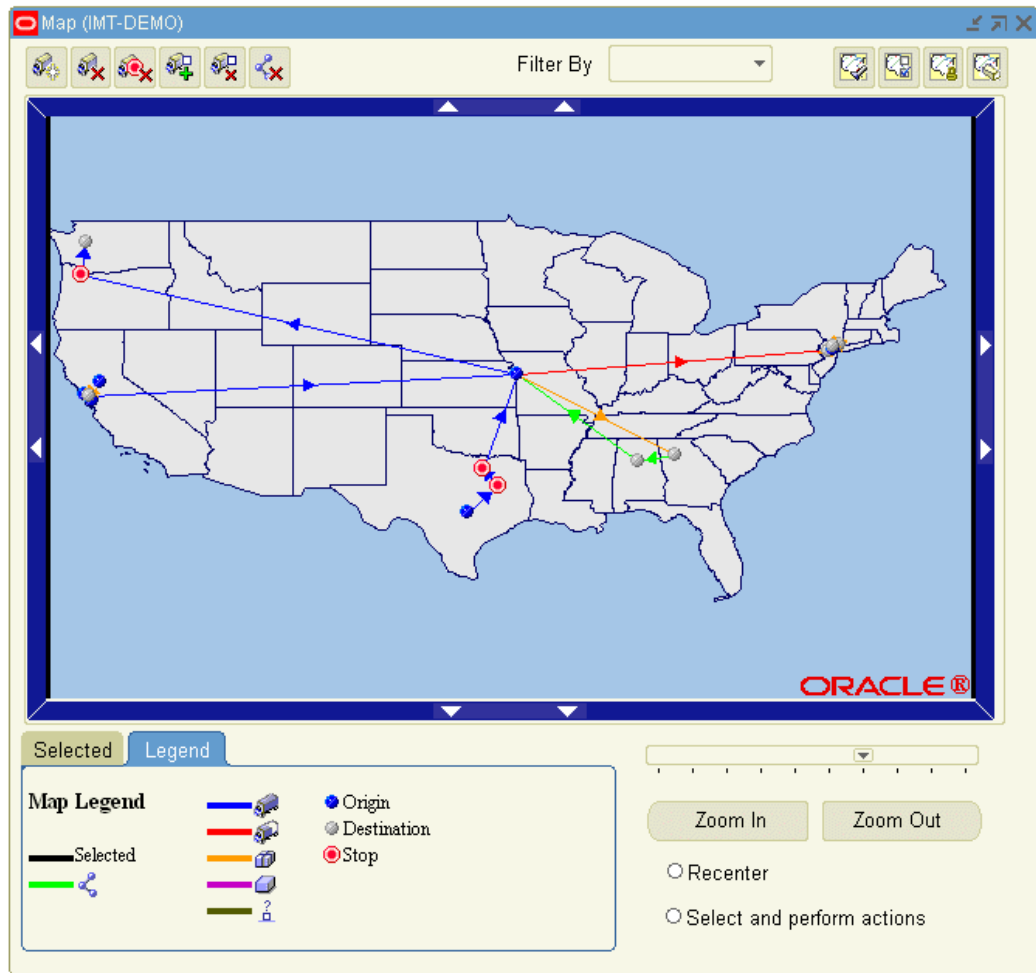
On the Delivery Details window, choosing the jump back icon displays a list of all the open windows in the order in which they were opened: All Truckloads Summary, Truckload Details, Stop Details, Delivery Details. If you select Truckload Details in this list, the Truckload Details window appears on top. The All Truckloads Summary window remains open but the Stop Details and Delivery Details windows close.

Note that, if you switch to Advanced Window Controls in the midst of a workbench session, you can use jump back instantly since the system always stores the chain of drill downs.

## Map View

Oracle Transportation Planning enables the transportation planner to view conceptual representations of plan elements on a map. Display of any trip or unassigned delivery involves plotting points representing its origin and destination, together with a straight arrow (line) connecting them. The map also displays icons representing facilities as stops, origins, or destinations.

## Map Window

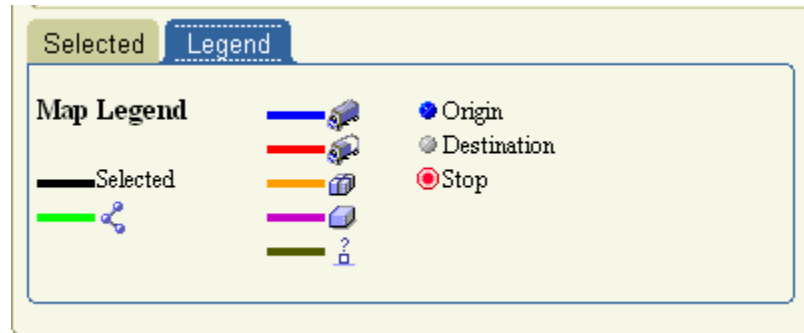


## Map Features

### Map Legend

The system displays the map legend on the Legend tab at the bottom of the Map window. The legend shows the colors representing the various types of plan elements on the map and the icons used to represent the various facilities on the map, such as stops, origins, and destinations.

### Map Legend



— Selected

Color in which an entity on the map that has been selected is displayed.



Color in which a continuous move is displayed on the map.



Color in which a truckload trip is displayed on the map.



Color in which an under-utilized truckload is displayed on the map. This applies to truckload trips whose utilization falls below the threshold specified for underutilized vehicle exceptions in Global Preferences.



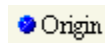
Color in which a less-than-truckload trip is displayed on the map.



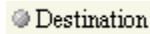
Color in which a parcel trip is displayed on the map.



Color in which an unassigned delivery is displayed on the map.



Color in which a trip's origin facility is displayed on the map.



Color in which a trip's destination facility is displayed on the map.



Color and format in which an intermediate stop of a trip is displayed on the map.

Note that you may change your map display preferences such as color and line thickness using the Map Preferences icon at the top right corner of the Map window. See 'Map Preferences, page 11-53 for more information.

### Re-Center

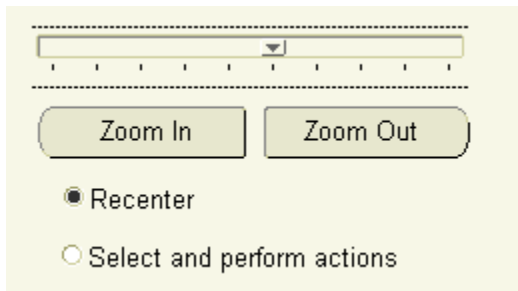
Select the Re-Center radio button on the Map window and then click any point on the map to change the map view such that the point you clicked on becomes the center of the map.

### Zoom In and Zoom Out

Click the Zoom in and Zoom Out buttons at the bottom of the Map window to zoom in and out of the map, at any time, based on the currently displayed map center.

The first time you access the system, by default, the system displays the entire map for which you have loaded data. By zooming in or out and re-centering, you can create frames appropriate to various geographic scales and areas. Note that the zoom in and zoom out functions are independent of the option you select on the map (Recenter or Select and Perform Actions) and you can zoom in or out at any time.

#### ***Zoom in and Zoom Out Buttons***



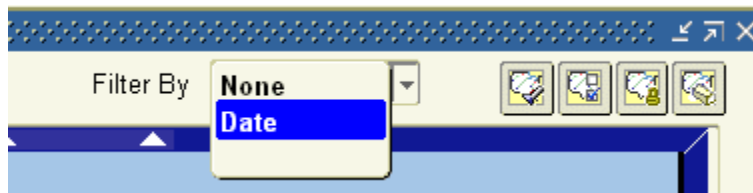
You may also select a level in the zoom scale to zoom to that level directly.

Clicking on the boundary bars of the map pans the map in the selected directions: North, South, East, or West.

### Filter

The Filter By field available on the top right side of the Map window enables you to specify a date range (arrival date, departure date, or any date overlap) to narrow down the information that the map displays.

### ***The Filter on the Map Window***



To filter map content by date, select Date in the Filter by field. This opens the Filter Plan by Date window. You can select the type of date filter to apply and specify the date range. You can select from the following date filter types.

- Departure
- Arrival
- Overlap

**Note:** Setting up a map filter will help you to:

- Prevent new plan elements beyond the scope of the filter from being added to the map.
- Remove existing plan elements already displayed on the map that are beyond the scope of the filter.

Consider a situation where the map window currently displays two trips, one departing on February 15 and the other on February 16. If you only want to view the trip departing on February 16, if you deploy a departure time filter of February 16 - February 16, the February 15 departing trip will be removed from the map. Also, if you select a group of trips and try to add them to the map, only those trips departing on February 16 will actually be added to the map. To clear the filter, you can choose Filter By None. This will cease the filtering of any new items added to the map but it will not bring back items that were previously on the map but then removed by the filter that was in force.

### Filter Plan by Date Window

The screenshot shows a dialog box titled "Filter Plan By Date". It contains three input fields: "Type" with a dropdown menu showing "Arrival", "From" with a text box and an ellipsis button, and "To" with a text box. Below these fields are "Ok" and "Cancel" buttons.

The map displays the following elements filtered by date:

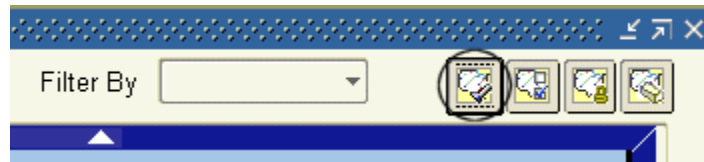
- Trips:
  - **Departure:** All the trips with stops with departure times within the specified date range
  - **Arrival:** All the trips with stops with arrival times within the specified date range
  - **Overlap:** All the trips that are in transit during the specified date range (initial departure time is before or during the date range and final arrival time is during or after the date range).
- Stops: All stops of trips that meet the filter criteria
- Unassigned Deliveries:
  - **Departure:** All the deliveries that can depart because their departure windows overlap with the specified date range
  - **Arrival:** All the deliveries that can arrive because their arrival windows overlap with the specified date range
  - **Overlap:** All the deliveries that can be in transit because their departure-to-arrival time ranges overlap with the specified date range

### Find

The Find icon on the top right corner of the Map window enables a quick search for elements, such as truckloads, less-than-truckload trips, parcel trips, continuous moves, facilities, and unassigned deliveries.

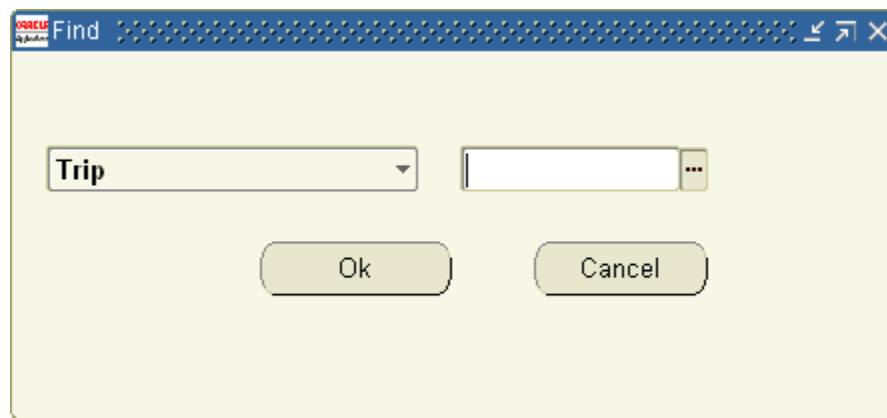


### ***The Find Icon on the Map Window***



Choosing the Find icon opens the Find window. In the Find window, you can select the element type, such as Trip, that you want to find. You can then select the specific entity of the selected element type that you want to find from the list of values.

### ***Find Window***



You may search for the following elements:

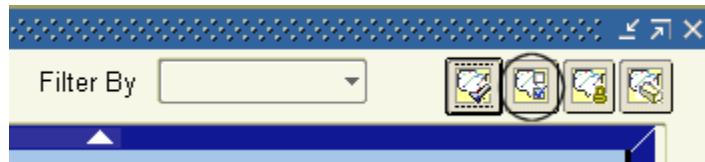
- Trip
- Continuous Move
- Unassigned Delivery
- Facility

When you click OK to execute the search, the map displays the resulting entity with highlights.

## **Map Preferences**

The Map Preferences icon at the top right corner of the Map window provides access to the User Preferences window. On the Map tab of the User Preferences window, you can change your map display preferences, such as colors and line thickness. For more information, see 'User Preferences Setup for Map, page 5-26.

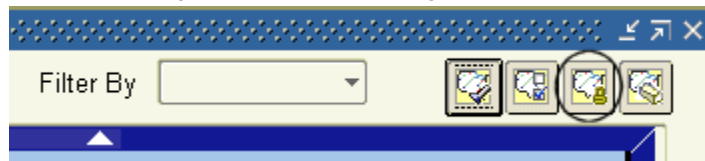
#### ***The Map Preferences Icon on the Map Window***



#### **Default Map View**

The Default Map View icon at the top right corner of the Planner Workbench enables you to restore the map view to the default zoom value and default centering.

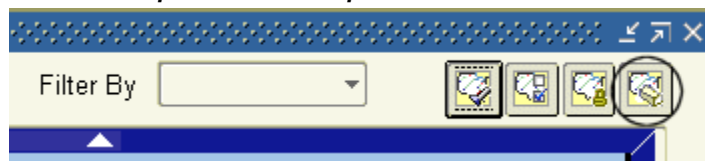
#### ***The Default Map View Icon on the Map Window***



#### **Clear Map**

At any point, you can clear the map using the Clear Map icon at the top right corner of the Map window. This action removes only plan elements currently being displayed on the map from the map display. Map boundaries remain.

#### ***The Clear Map Icon on the Map Window***



#### **Select and Perform Actions**

Selecting this radio button at the bottom right corner of the Map window enables you to select items on the map and then perform actions, such as deleting a trip or dissolving a continuous move.

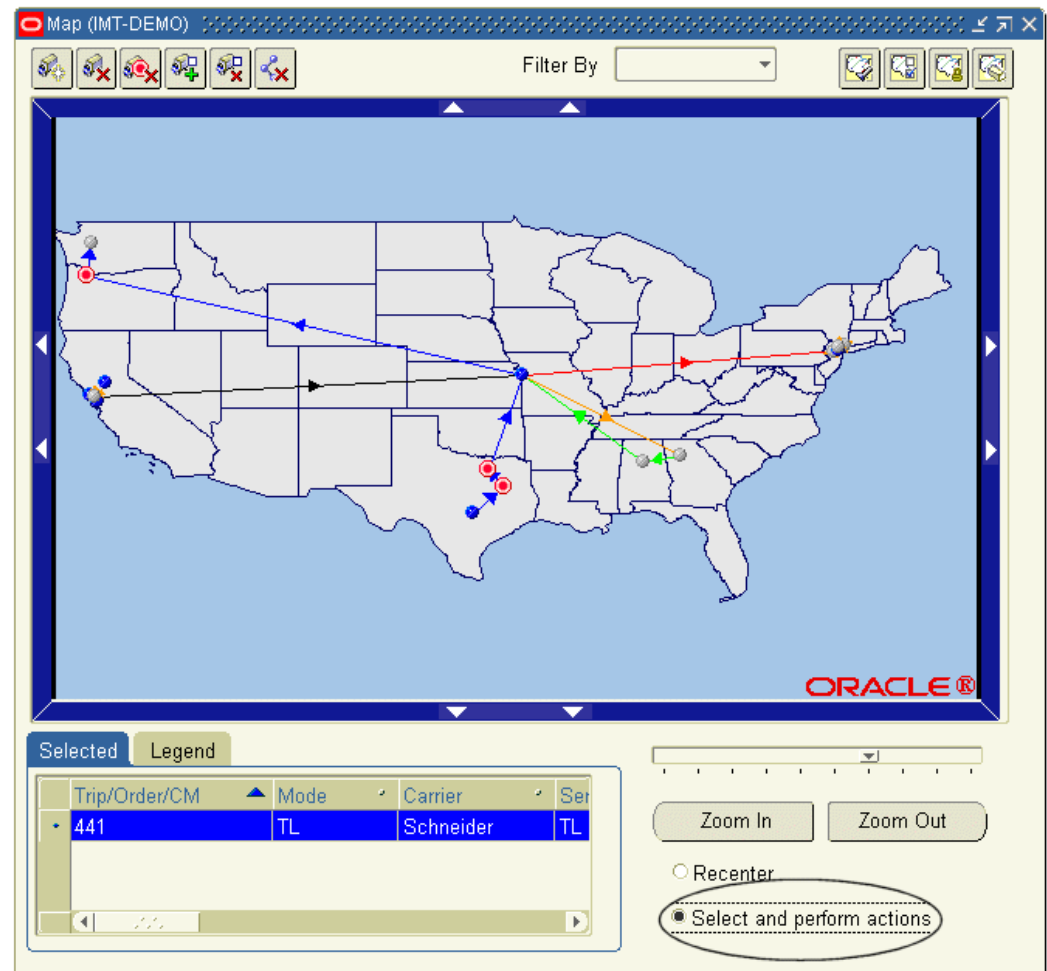
You can select a single item on the map by clicking it. This de-selects any previously selected items. To select multiple items on the map, first select an item by clicking it, then hold down the Ctrl key and select subsequent items. Note that, to select an item on the map, you must have the Select and perform actions option selected.

It is possible to have overlaid items on the map. For example, a truckload trip and a continuous move or two trips travelling from the same origin to the same destination will be overlaid on the map. In such cases, when you place the mouse over the element

of interest, you see a list of values from which you can choose one specific element.

The Selected tab on the Map window lists the items currently selected on the map and for each selected item, shows the mode, carrier, service, vehicle type (if truckload), departure time, arrival time, origin, and destination. If the entity selected on the map is a facility, the Selected tab displays the facility information in the Origin Facility column, all other columns are blank.

#### Select and Perform Actions Radio Button

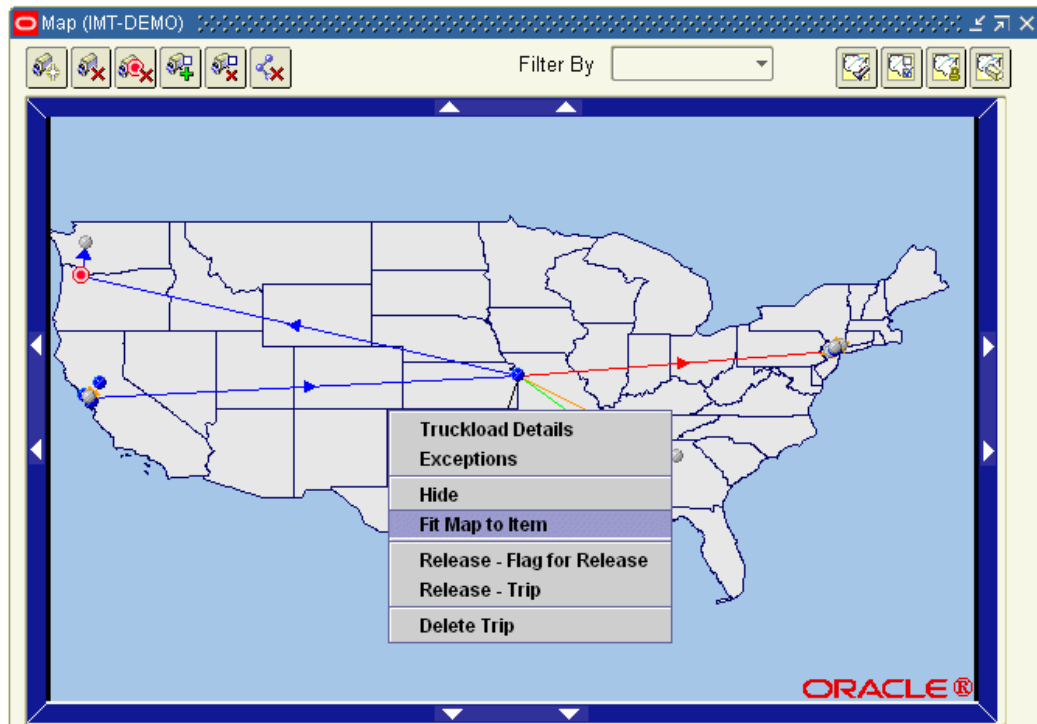


#### Fit Map to Item

You can select one or more items on the map and then right-click to select the Fit Map to Item option. This re-centers the map and zooms on to the area immediately around these items. Note that before selecting the item or items, you must have selected the option Select and perform actions.

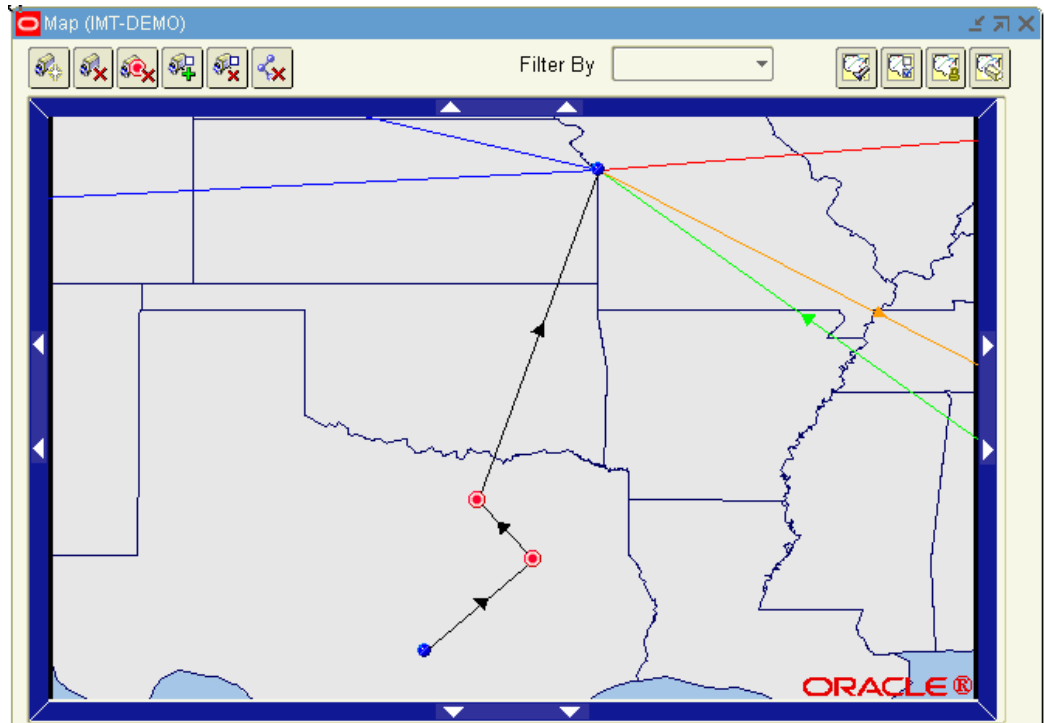
For example, suppose that the map appears as follows before selecting Fit Map to Item.

**Map Before Selecting Fit Map to Item**



The map will appear as follows after selecting Fit Map to Item:

### Map After Selecting Fit Map to Item



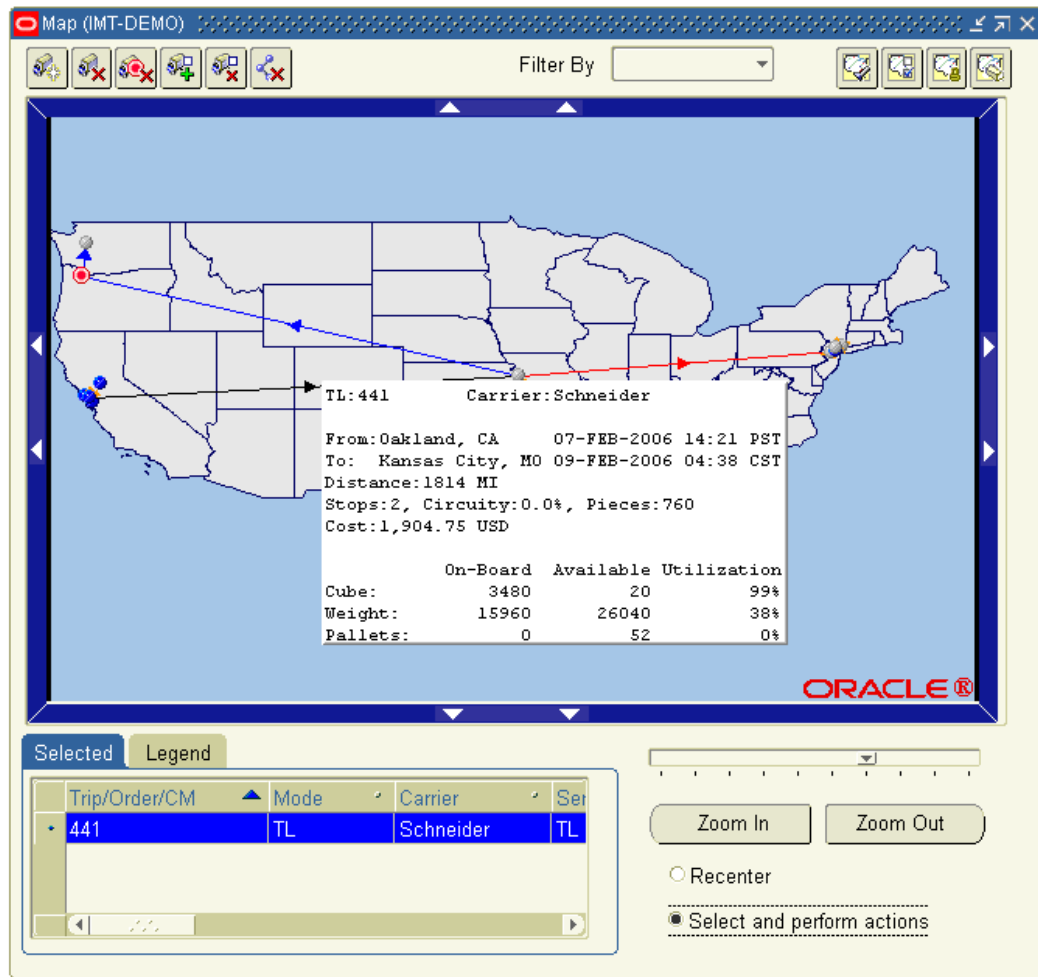
### Hide

You can choose to remove an element from the map by selecting the element, right-clicking, and then selecting Hide. Note that before selecting the item or items, you must have selected the option Select and perform actions.

### Mouse-Overs

You can obtain more information about a plan element on the map by holding the cursor over a graphical element. When you do so, a mouse-over window appears. The window provides brief information about the item over which you hold the cursor.

**Map Window Showing Mouse Over Window for a Truckload Trip**



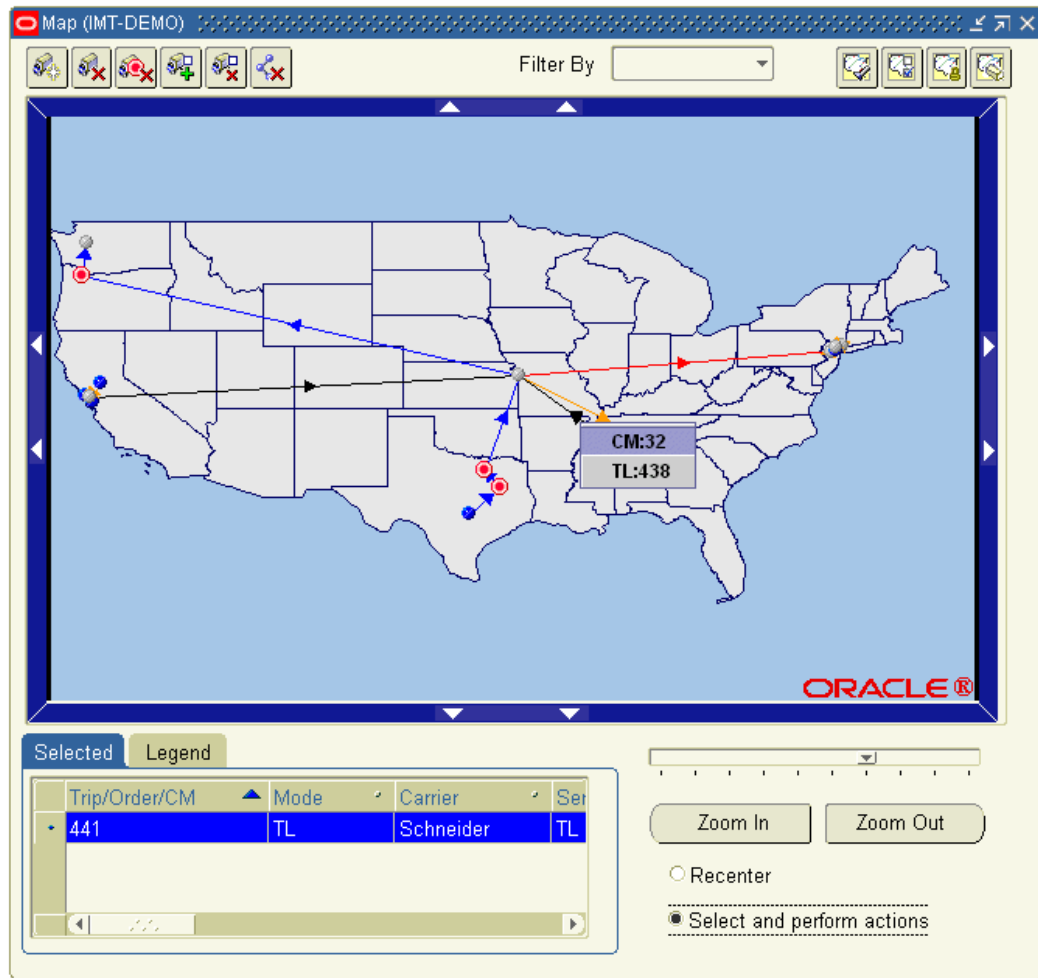
For example, the data displayed on the mouse-over window for a truckload trip is shown in the following table.

Tag	Description
TL	Truckload Number
Carrier	Carrier Name
From	First stop city, state (origin) and date and time of departure from the stop including time zone

Tag	Description
To	Last stop city, state (destination) and date and time of arrival at destination including time zone
Distance	Distance covered and unit of measure
Stops	Total number of stops
Circuitry	Circuitry in percentage
Pieces	Number of pieces (of goods) on board the truck
Cost	Total transportation cost and currency unit of measure
Cube On-Board	Total cube of deliveries on board the vehicle and cube unit of measure
Available	Un-utilized vehicle cube capacity
Utilization	Vehicle cube capacity utilization expressed in percentage
Weight On-Board	Total weight of goods on board the vehicle and weight unit of measure
Available	Un-utilized vehicle weight capacity
Utilization	Vehicle weight capacity utilization expressed in percentage
Pallets on Board	Number of pallets on board the vehicle
Available	Un-utilized vehicle pallet capacity
Utilization	Vehicle pallet capacity utilization expressed in percentage

When you hold the cursor over a trip in a continuous move, a list of values displaying the trip and the continuous move appears so that you can select the one for which you want to see the mouse-over data.

### Map Window Showing Mouse Over List of Values for Trips in Continuous Moves



Also note that the following apply for mouse-over information pertaining to stops at a facility:

- Truckloads making drop-offs and truckloads making pick-ups may overlap if any truckload stop at a facility involves both drop-off and pick-up activity. In this case, the total truckload stops is less than the sum of the In (drop-off) and Out (pick-up) stops.
- Total inbound stops at a facility include truckloads making drop-offs as well as inbound less-than-truckload and parcel trips. Total outbound includes truckloads making pick-ups plus outbound less-than-truckload and parcel trips.

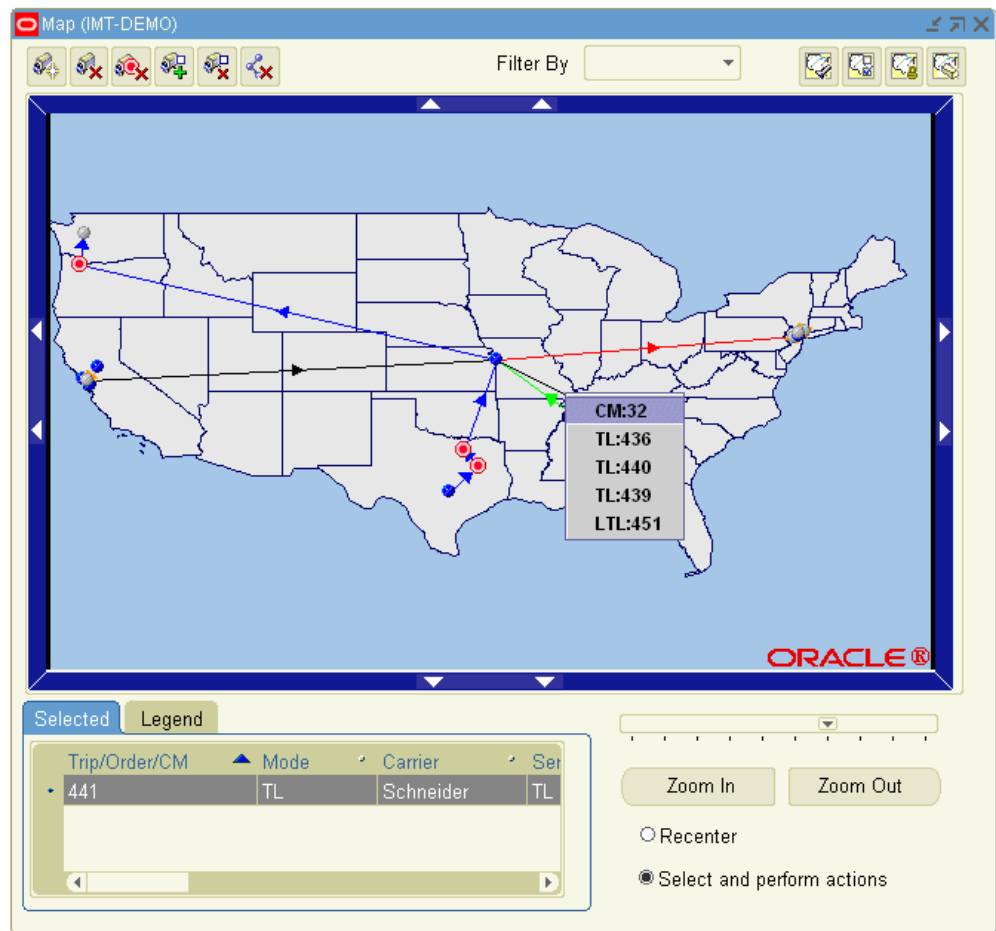
### Overlaid Items on the Map

Multiple items can be overlaid directly on top of each other on the map. This can occur in two situations:



1. Two trip legs or unassigned deliveries may have the same origin and destination and may, therefore, be represented on the map by lines in the exact same locations. In this case, a single click on a line joining the origin and the destination brings forth a list of values displaying the trips or unassigned deliveries corresponding to the line. You can then select one trip or delivery at a time to view the relevant mouse-over data.

**Map Window Showing List of Values for Overlaid Items on the Map**

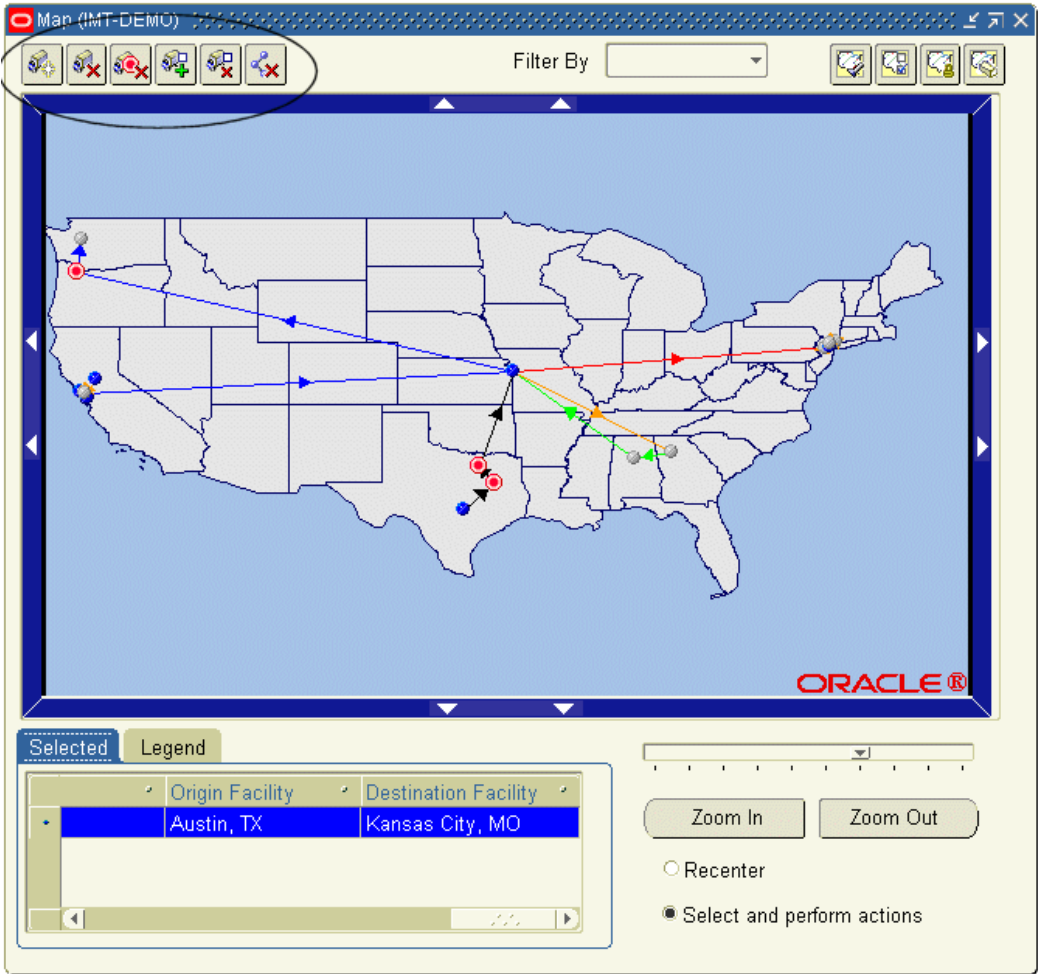


2. Two truckload legs, less-than-truckloads, parcels, or unassigned deliveries may share a common stop. The common stop may be origin of both trips or trip legs, destination of both, or origin of one but destination of the other. This results in the stop icon for the trips being the same. However, the stop icon represents the facility. As a result, no ambiguity exists as to what mouse-over data the system shows or which element has been selected for performing a subsequent action.
3. When you hold the cursor over a trip in a continuous move, a list of values displaying the trip and the continuous move appears so that you can select the one for which you want to see the mouse-over data.

# Map-Based Interactive Editing

Oracle Transportation Planning offers various map-based interactive editing tools to facilitate manipulation of the planning engine output. After selecting the required entities on the map, you can perform map based editing by selecting the appropriate map icons: Create Trip, Delete Trip, Dissolve Continuous Move, Unassign Delivery from Trip, Delete Stop from Trip, and Add Shipment to Trip.




Icons for Map-Based Interactive Editing





You can also perform the same interactive editing functions by selecting the required entities on the map and then right-clicking to select actions on the map. You can also use toolbar menu options.



Note that, before performing any action on the map, you must have selected the Select and Perform Actions option at the bottom of the Map window.

The following table summarizes the actions you can perform on the map.

Map Icon	Action	Navigation Options
Create Trip 	Create a trip between two facilities	<ul style="list-style-type: none"> <li>Select two facilities on the map by clicking on one facility icon, then holding down the Ctrl key and selecting the second facility. Then click the Create Trip icon at the top left corner of the Map window.</li> <li>Select two facilities on the map and then right-click and select Create Trip.</li> </ul>
Create Trip 	Quick trip build for unassigned deliveries	<ul style="list-style-type: none"> <li>Select an unassigned delivery on the map by clicking on the line joining the origin and destination of the delivery and then click the Create Trip icon at the top left corner of the Map window.</li> <li>Select an unassigned delivery on the map and then right-click and select the Quick Trip Build option.</li> </ul>
Delete Trip 	Delete a trip	<ul style="list-style-type: none"> <li>Select a trip on the map by clicking on the line joining the trip's origin and destination and then click the Delete Trip icon at the top left corner of the Map window.</li> <li>Select a trip on the map and then right-click and select the Delete Trip option.</li> </ul> <p>If the system deletes the trip, any deliveries previously assigned to the trip become automatically unassigned.</p>

Map Icon	Action	Navigation Options
Delete Stop from Trip 	Delete a stop from a trip	<ul style="list-style-type: none"> <li>Select a stop or facility on the map by clicking on the stop or facility icon and then click the Delete Stop from Trip icon at the top left corner of the Map window.</li> <li>Select a stop or facility on the map and then right-click and select the Delete Stop from Trip option.</li> </ul> <p>If multiple trips stop at this facility, then choosing the Delete Stop from Trip action produces a list of values of trips. You can select the trip from which to remove the stop.</p>

Map Icon	Action	Navigation Options
Add Shipment to Trip 	Add a shipment to a trip	<ul style="list-style-type: none"> <li>Select two items on the map by clicking on each item and then click the Add Shipment to Trip icon at the top left corner of the Map window.</li> <li>Select two items on the map and then right-click and select the Add Shipment to Trip option.</li> </ul> <p>Oracle Transportation Planning supports various scenarios of what the selected items can be:</p> <ul style="list-style-type: none"> <li>Both items are unassigned deliveries.</li> <li>One item is an unassigned delivery; the other item is a parcel or less-than-truckload move.</li> <li>One item is an unassigned delivery, the other item is a direct or multi-stop truckload.</li> <li>Both items are either parcel moves or less-than-truckload moves.</li> <li>One item is a parcel or less-than-truckload move; the other item is a direct or multi-stop truckload.</li> <li>Both items are direct or multi-stop truckloads.</li> </ul>

Map Icon	Action	Navigation Options
Remove Shipment from Trip 	Remove a shipment from a trip	<ul style="list-style-type: none"> <li>Select a trip on the map by clicking on the line joining the trip's origin and destination and then select the Remove Shipment from Trip icon at the top left corner of the Map window.</li> <li>Select a trip on the map and then right-click and select the Remove Shipment from Trip option.</li> </ul> <p>The system displays the deliveries on the trip and you can select one delivery at a time to remove from the trip.</p>
Dissolve Continuous Move 	Dissolve a continuous move	<ul style="list-style-type: none"> <li>Select a continuous move on the map by double-clicking on the line joining the origin and destination of any trip in the continuous move (including empty deadheads). Then click the Dissolve Continuous Move icon at the top left corner of the Map window.</li> <li>Select a continuous move on the map and right-click and select the Dissolve Continuous Move option.</li> </ul>

## The Planner Workbench Toolbar

The following toolbar menus are available on the Planner Workbench:

- File
- Edit
- View
- Folder
- Tools
- Plan
- Actions

- Window
- Help

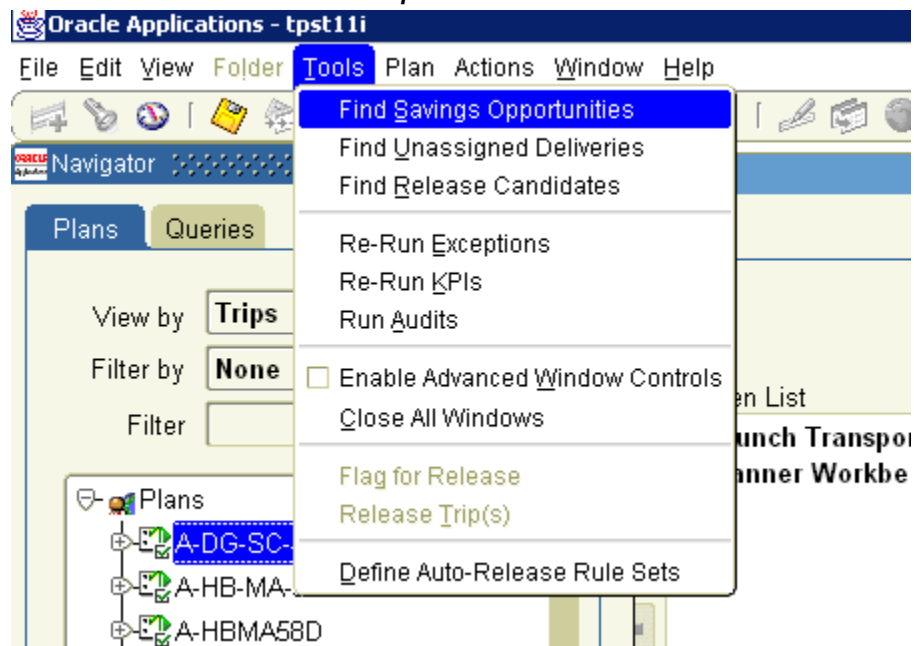
The following sections discuss the different options available from the Tools, Plan, and Actions menu. Note that the set of Tools, Plan, and Actions menu options enabled differs with the node selected on the navigation tree.

For detailed procedures involving these menu options, refer to 'Modifying and Improving Plans, page 12-1.

## Tools Menu

The following section presents the options available from the Planner Workbench Tools menu.

### Planner Workbench Tools Menu Options



The following table lists the Tools menu options.

Menu Option Selected	Result	Shortcuts
Find Savings Opportunities	Opens the Find Savings Opportunities window.	s
Find Unassigned Deliveries	Shows a list of all unassigned deliveries in the selected plan.	u

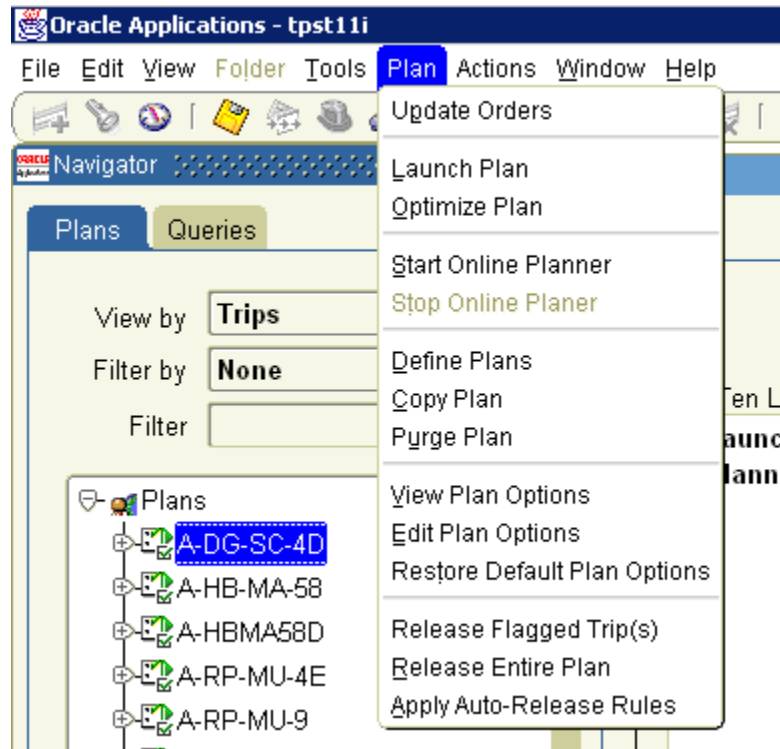
Menu Option Selected	Result	Shortcuts
Find Release Candidates	Shows lists of trips that can be released.	r
Re-Calculate Exceptions	Re-calculates exceptions for the entire plan.	e
Re-Calculate KPIs	Re-calculates Key Performance Indicators for the entire plan.	k
Run Audits	Runs audit exceptions for the entire plan.	a
Enable Advanced Window Controls	Enables advanced navigation features.	w
Close All Windows	Closes all windows.	c
Flag for Release	Flags trips for release.	g
Release Trip(s)	Opens the Release window populated with the trip(s) (truckloads, less-than-truckloads, parcels, continuous moves) selected on the left tree.	t
Define Auto-Release Rule Sets	Opens the Maintain Auto-Release Rule Set window.	d

## Plan Menu

The following section presents the options available from the Planner Workbench Plan menu.



### Planner Workbench Plan Menu Options



The following table lists the Plan menu options:

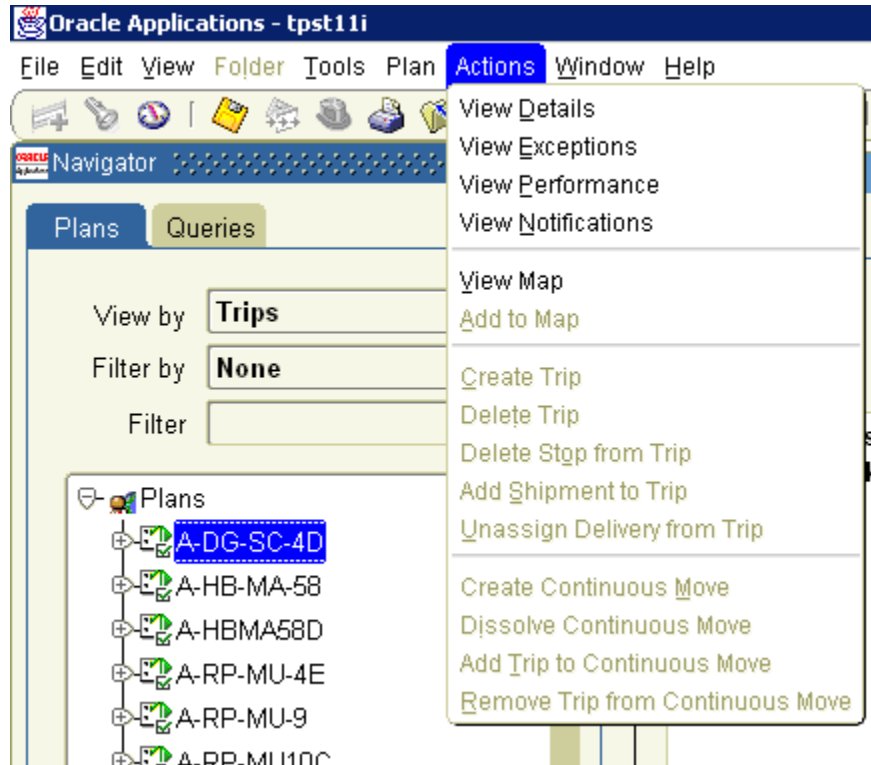
Menu Option Selected	Result	Shortcuts
Update Orders	The Launch Update Order concurrent request window appears.	p
Launch Plan	The Launch Plan concurrent request window appears.	l
Optimize Plan	The Optimize Plan concurrent request window appears.	o
Start Online Planner	Starts the Online Planner (When you take an action, such as selecting a delivery and adding the shipment to a trip, the Online Planner will start automatically.)	s
Stop Online Planner	Stops the Online Planner.	t

Menu Option Selected	Result	Shortcuts
Define Plans	Opens the Plan Names window.	d
Copy Plan	Opens the Copy Plan window populated with the selected plan as the Source Plan.	c
Purge Plan	Submits the purge process and a message displays the request ID.	u
View Plan Options	Opens the Plan Options window showing the plan options for the selected plan. You cannot edit these plan options.	v
Edit Plan Options	Opens the Plan Options window for the selected plan. You can edit these plan options.	e
Restore Default Plan Options	Restores the values of plan options for the selected plan as in the user's default template.	t
Release Flagged Trip(s)	Opens the Release window populated with trips (truckloads, less-than-truckloads, parcels, or continuous moves) flagged for release.	g
Release Entire Plan	Opens the Release window populated with data for the selected plan.	r
Apply Auto-Release Rules	Applies the auto-release rule set (as specified in plan options) to the current state of the plan to identify and release entities that match the rules.	a

## Actions Menu

The following section presents the options available from the Planner Workbench Actions menu.

### Planner Workbench Actions Menu Options



The following table lists the options available from the Actions menu.

Menu Option Selected	Results	Shortcuts
View Details	Opens the Details window corresponding to the entity selected on the navigation tree.	d
View Exceptions	Opens the appropriate Exceptions window based on selection on the navigation tree.	e
View Performance	Opens the Performance window.	p
View Map	Maps the tree node selected on the navigation tree.	v
Add to Map	Adds the tree node selected on the navigation tree to the existing map window.	a
Create Trip	Creates trip.	c

Menu Option Selected	Results	Shortcuts
Delete Trip	Deletes trip.	t
Delete Stop from Trip	Deletes stop from trip.	o
Add Shipment to Trip	Adds shipment to trip.	s
Unassign Delivery from Trip	Unassigns delivery from trip.	u
Dissolve Continuous Move	Dissolves continuous move.	i

## Menu Options Available by Right-Clicking Tree Nodes

The menu options available when you right-click tree nodes vary with the node you select.

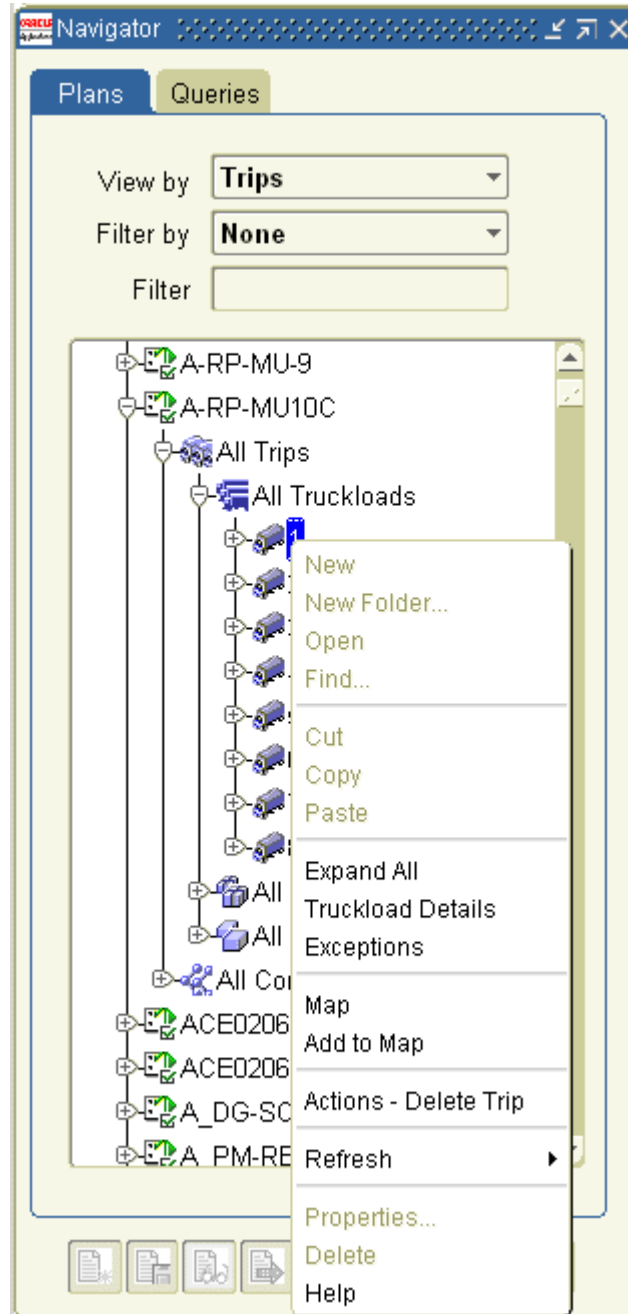
If you select multiple elements of the same element type (truckload, less-than-truckload, parcel, continuous move) on the tree and right-click, the system displays the menu relevant to the multiple selection. Certain options are not available on this menu, such as, Details and Exceptions (available only for one single element). Other menu options relevant for multi-selection, such as, Release, Map, and Add to Map are available on the menu.

The following example illustrates the difference in menu options available when you select and right-click a single element and multiple elements of the same type on the navigation tree.

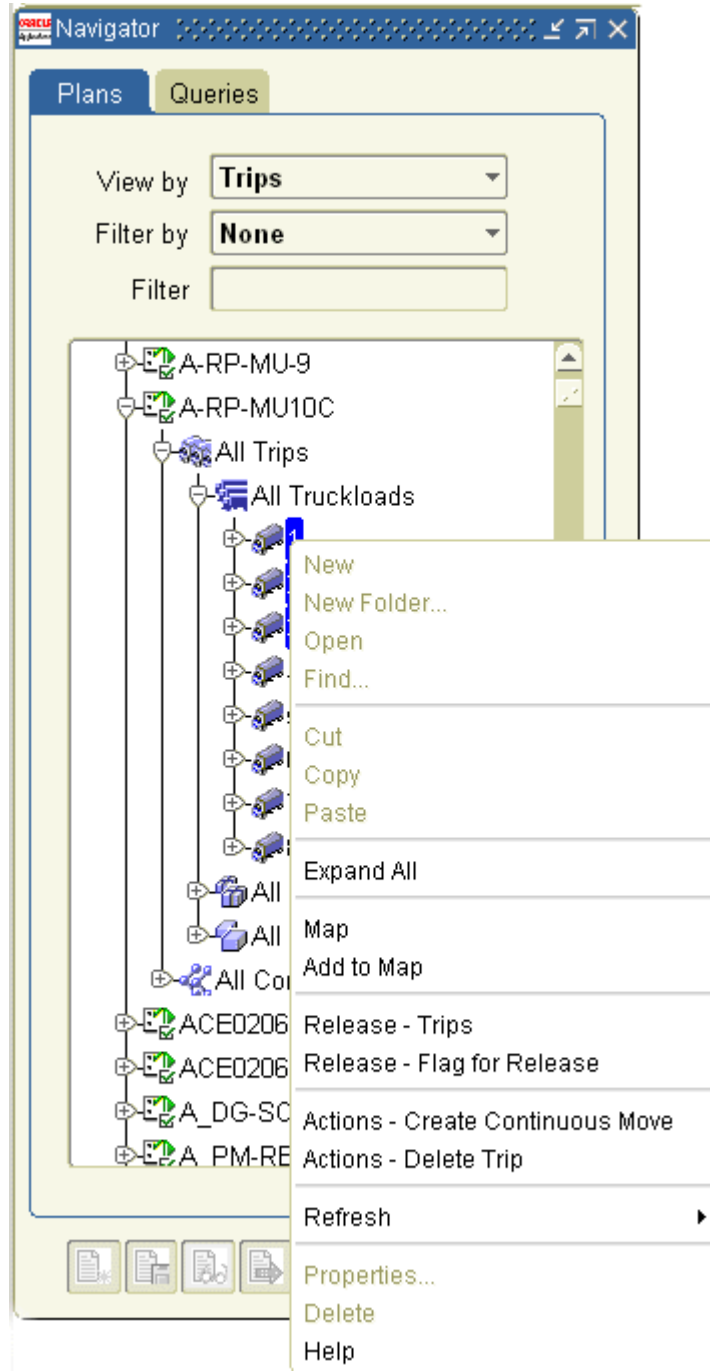
When you select a single truckload and then right-click, the menu options available are Truckload Details, Exceptions, Map, Add to Map, Actions - Delete Trip, Refresh, and Help.

When you select two or more truckloads and then right-click, the menu options available are Map, Add to Map, Release - Trips, Release - Flag for Release, Actions - Delete Trip, Refresh, and Help.

- Right Mouse Click Options when a Single Truckload is Selected



- Right Mouse Click Options when Multiple Truckloads are Selected



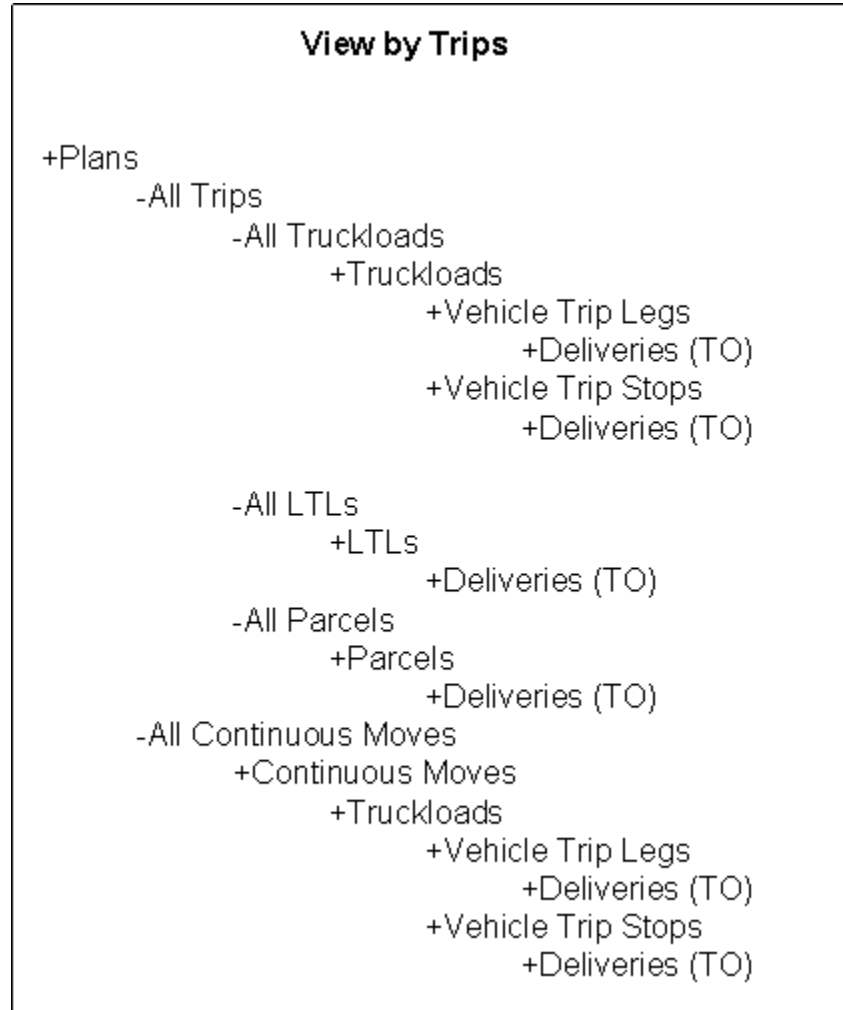
The following sections list the menu options that are available when you select and right-click nodes on the navigation tree for the different View by options. A separate section deals with menu options available when you right-click a map entity.

## View by Trips

'Menu Options Available on Right-Clicking Tree Nodes for View by Trips, page 11-76 lists the right mouse click options enabled for tree nodes when you view by trips.

The following figure shows the Planner Workbench navigation tree hierarchy when you choose to view by Trips.

**Navigation Tree Hierarchy for View by Trips**



The following table lists the menu options available on right-clicking tree nodes for view by trips.

<b>Node on Navigation Tree</b>	<b>Options Available by Right-Clicking Tree Node</b>	<b>Options Available by Selecting Multiple Tree Nodes and then Right-Clicking</b>
Plans	<ul style="list-style-type: none"> <li>• Plan Summary</li> <li>• Exceptions (for entire plan)</li> <li>• Performance</li> <li>• Plan Options</li> <li>• Copy Plan</li> <li>• Refresh</li> <li>• Help</li> </ul>	Not Applicable
All Trips	<ul style="list-style-type: none"> <li>• All Trips Summary</li> <li>• Performance</li> <li>• Refresh</li> <li>• Help</li> </ul>	Not Applicable
All Truckloads	<ul style="list-style-type: none"> <li>• All Truckloads Summary</li> <li>• Exceptions</li> <li>• Performance</li> <li>• Refresh</li> <li>• Help</li> </ul>	Not Applicable



<b>Node on Navigation Tree</b>	<b>Options Available by Right-Clicking Tree Node</b>	<b>Options Available by Selecting Multiple Tree Nodes and then Right-Clicking</b>
Truckload	<ul style="list-style-type: none"> <li>• Truckload Details</li> <li>• Exceptions (for that load)</li> <li>• Map</li> <li>• Add to Map</li> <li>• Add Shipment to Trip (enabled only when shipment is also selected)</li> <li>• Delete Trip</li> <li>• Refresh</li> <li>• Help</li> </ul>	<ul style="list-style-type: none"> <li>• Map</li> <li>• Add to Map</li> <li>• Delete Trip</li> <li>• Refresh</li> <li>• Help</li> </ul>
Trip Legs	<ul style="list-style-type: none"> <li>• Leg Details</li> <li>• Map (display the entire trip of the leg)</li> <li>• Add to Map (display the entire trip of the leg)</li> <li>• Refresh</li> <li>• Help</li> </ul>	<ul style="list-style-type: none"> <li>• Map (display the entire trips of the legs)</li> <li>• Add to Map (display the entire trips of the legs)</li> <li>• Refresh</li> <li>• Help</li> </ul>

<b>Node on Navigation Tree</b>	<b>Options Available by Right-Clicking Tree Node</b>	<b>Options Available by Selecting Multiple Tree Nodes and then Right-Clicking</b>
Deliveries	<ul style="list-style-type: none"> <li>• Delivery Details</li> <li>• Exceptions</li> <li>• Map (all the trips that the delivery travels on)</li> <li>• Add to Map (all the trips that the delivery travels on)</li> <li>• Unassign Delivery from Trip</li> <li>• Refresh</li> <li>• Help</li> </ul>	<ul style="list-style-type: none"> <li>• Map (all the trips that the deliveries travel on)</li> <li>• Add to Map (all the trips that the deliveries travel on)</li> <li>• Refresh</li> <li>• Help</li> </ul>
Trip Stop	<ul style="list-style-type: none"> <li>• Stop Details</li> <li>• Map (entire trip)</li> <li>• Add to Map (entire trip)</li> <li>• Delete Stop from Trip</li> <li>• Refresh</li> <li>• Help</li> </ul>	<ul style="list-style-type: none"> <li>• Map (entire trip)</li> <li>• Add to Map (entire trip)</li> <li>• Refresh</li> <li>• Help</li> </ul>
All LTLs	<ul style="list-style-type: none"> <li>• All LTLs Summary</li> <li>• Exceptions</li> <li>• Performance</li> <li>• Refresh</li> <li>• Help</li> </ul>	Not Applicable

Node on Navigation Tree	Options Available by Right-Clicking Tree Node	Options Available by Selecting Multiple Tree Nodes and then Right-Clicking
LTLs	<ul style="list-style-type: none"> <li>• LTL Details</li> <li>• Exceptions</li> <li>• Performance</li> <li>• Map</li> <li>• Add to map</li> <li>• Add to truckload (enabled if truckload is also selected on map)</li> <li>• Add Shipment to Trip (enabled only when shipment is also selected on the map)</li> <li>• Delete Trip</li> <li>• Refresh</li> <li>• Help</li> </ul>	<ul style="list-style-type: none"> <li>• Map</li> <li>• Add to Map</li> <li>• Combine Trips</li> <li>• Delete Trips</li> <li>• Refresh</li> <li>• Help</li> </ul>
All Parcels	<ul style="list-style-type: none"> <li>• All Parcels Summary</li> <li>• Exceptions</li> <li>• Performance</li> <li>• Refresh</li> <li>• Help</li> </ul>	Not Applicable

<b>Node on Navigation Tree</b>	<b>Options Available by Right-Clicking Tree Node</b>	<b>Options Available by Selecting Multiple Tree Nodes and then Right-Clicking</b>
Parcel	<ul style="list-style-type: none"> <li>• Parcel Details</li> <li>• Exceptions</li> <li>• Map</li> <li>• Add to Map</li> <li>• Add to truckload (enabled if truckload is also selected on map)</li> <li>• Add Shipment to Trip (enabled only when shipment is also selected on the map)</li> <li>• Delete Trip</li> <li>• Refresh</li> <li>• Help</li> </ul>	<ul style="list-style-type: none"> <li>• Map</li> <li>• Add to Map</li> <li>• Delete Trip</li> <li>• Refresh</li> <li>• Help</li> </ul>
All Continuous Moves	<ul style="list-style-type: none"> <li>• All Continuous Moves Summary</li> <li>• Exceptions</li> <li>• Refresh</li> <li>• Help</li> </ul>	Not Applicable

Node on Navigation Tree	Options Available by Right-Clicking Tree Node	Options Available by Selecting Multiple Tree Nodes and then Right-Clicking
Continuous Moves	<ul style="list-style-type: none"> <li>• Continuous Move Details</li> <li>• Exceptions (for any trips on the continuous move and/or this continuous move)</li> <li>• Map (all trips on this continuous move)</li> <li>• Add to Map</li> <li>• Dissolve Continuous Move</li> <li>• Refresh</li> <li>• Help</li> </ul>	<ul style="list-style-type: none"> <li>• Map (all trips on this continuous move)</li> <li>• Add to Map</li> <li>• Dissolve Continuous Move</li> <li>• Refresh</li> <li>• Help</li> </ul>

## View by Orders

'Menu Options Available on Right-Clicking Tree Nodes for View by Orders, page 11-82 lists the right mouse click options enabled for tree nodes when you view by orders.

The following figure shows the Planner Workbench navigation tree hierarchy when you choose to view by Orders.

**Navigation Tree Hierarchy for View by Orders**



The following table lists the menu options available on right-clicking tree nodes for view by orders.

<b>Node on Navigation Tree</b>	<b>Options Available by Right-Clicking Tree Node</b>	<b>Options Available by Selecting Multiple Tree Nodes and then Right-Clicking</b>
Plans	<ul style="list-style-type: none"> <li>• Plan Summary</li> <li>• Exceptions (for entire plan)</li> <li>• Performance</li> <li>• Plan Options</li> <li>• Copy Plan</li> <li>• Refresh</li> <li>• Help</li> </ul>	Not Applicable
All Orders	<ul style="list-style-type: none"> <li>• All Orders Summary</li> <li>• Refresh</li> <li>• Help</li> </ul>	Help
Orders	<ul style="list-style-type: none"> <li>• Order Details</li> <li>• Exceptions (all exceptions for delivery lines that constitute that order)</li> <li>• Refresh</li> <li>• Help</li> </ul>	Help

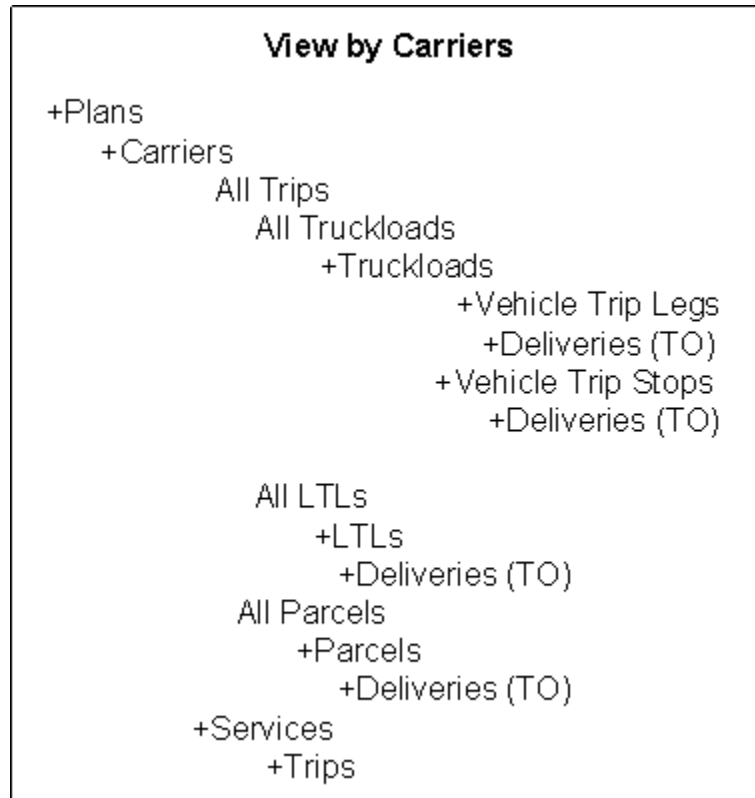
Node on Navigation Tree	Options Available by Right-Clicking Tree Node	Options Available by Selecting Multiple Tree Nodes and then Right-Clicking
Deliveries	<ul style="list-style-type: none"> <li>• Delivery Details</li> <li>• Exceptions</li> <li>• Map (all the trips that the delivery travels on)</li> <li>• Add to Map (all the trips that the delivery travels on)</li> <li>• Unassign Delivery from Trip (if not unassigned)</li> <li>• Add Delivery to Trip (if unassigned)</li> <li>• Quick Trip Build (if unassigned)</li> <li>• Refresh</li> <li>• Help</li> </ul>	<ul style="list-style-type: none"> <li>• Map (all the trips that the deliveries travel on)</li> <li>• Add to Map (all the trips that the deliveries travel on)</li> <li>• Refresh</li> <li>• Help</li> </ul>
Trips	<ul style="list-style-type: none"> <li>• Trip Details</li> <li>• Exceptions</li> <li>• Map</li> <li>• Add to Map</li> <li>• Delete Trip</li> <li>• Help</li> </ul>	<ul style="list-style-type: none"> <li>• Map</li> <li>• Add to Map</li> <li>• Delete Trip</li> <li>• Refresh</li> <li>• Help</li> </ul>

## View by Carriers

'Menu Options Available on Right-Clicking Tree Nodes for View by Carriers, page 11-84 lists the right mouse click options enabled for tree nodes when you view by carriers.

The following figure shows the Planner Workbench navigation tree hierarchy when you choose to view by Carriers.

**Navigation Tree Hierarchy for View by Carriers**



The following table lists the menu options available on right-clicking tree nodes for view by carriers.

Node on Navigation Tree	Options Available by Right-Clicking Tree Node	Options Available by Selecting Multiple Tree Nodes and then Right-Clicking
-------------------------	---	--



<b>Node on Navigation Tree</b>	<b>Options Available by Right-Clicking Tree Node</b>	<b>Options Available by Selecting Multiple Tree Nodes and then Right-Clicking</b>
Plan	<ul style="list-style-type: none"> <li>• Plan Summary</li> <li>• Exceptions (for entire plan)</li> <li>• Performance</li> <li>• Plan Options</li> <li>• Copy Plan</li> <li>• Refresh</li> <li>• Help</li> </ul>	Not Applicable
Carriers	<ul style="list-style-type: none"> <li>• Carrier Details</li> <li>• Exceptions (for this carrier and any trips carried by this carrier)</li> <li>• Performance</li> <li>• Map (trips carried by this carrier)</li> <li>• Add to Map (trips carried by this carrier)</li> <li>• Refresh</li> <li>• Help</li> </ul>	<ul style="list-style-type: none"> <li>• Map (trips carried by these carriers)</li> <li>• Add to Map (trips carried by these carriers)</li> <li>• Refresh</li> <li>• Help</li> </ul>

<b>Node on Navigation Tree</b>	<b>Options Available by Right-Clicking Tree Node</b>	<b>Options Available by Selecting Multiple Tree Nodes and then Right-Clicking</b>
All Trips	See 'Menu Options Available on Right-Clicking Tree Nodes , page 11-76for View by Trips	See 'Menu Options Available on Right-Clicking Tree Nodes, page 11-76 for View by Trips
All Truckloads		
Truckloads		
Trip Legs		
Deliveries		
Trip Stops		
All LTLs		
LTLs		
All Parcels		
Parcels		
Services	<ul style="list-style-type: none"> <li>• Service Details</li> <li>• Map (trips assigned to this service)</li> <li>• Add to Map (trips assigned to this service)</li> <li>• Refresh</li> <li>• Help</li> </ul>	<ul style="list-style-type: none"> <li>• Map (trips assigned to this service)</li> <li>• Add to Map (trips assigned to this service)</li> <li>• Refresh</li> <li>• Help</li> </ul>

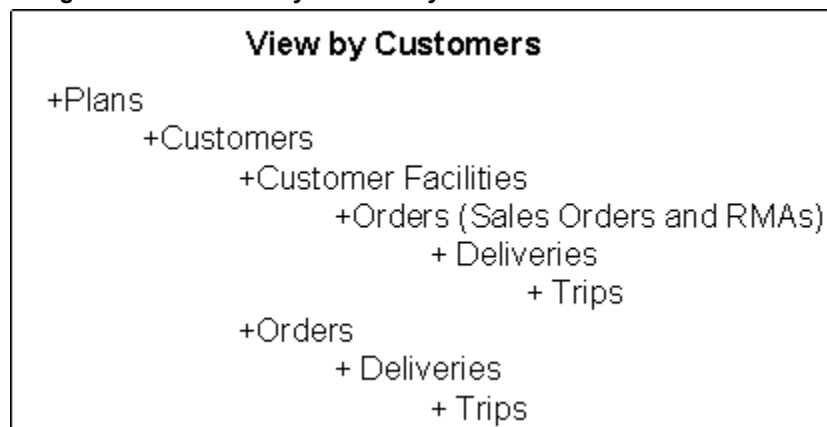
Node on Navigation Tree	Options Available by Right-Clicking Tree Node	Options Available by Selecting Multiple Tree Nodes and then Right-Clicking
Trips	<ul style="list-style-type: none"> <li>• Trip Details</li> <li>• Exceptions</li> <li>• Map</li> <li>• Add to Map</li> <li>• Delete Trip</li> <li>• Refresh</li> <li>• Help</li> </ul>	<ul style="list-style-type: none"> <li>• Map</li> <li>• Add to Map</li> <li>• Delete Trip</li> <li>• Refresh</li> <li>• Help</li> </ul>

## View by Customers

'Menu Options Available on Right-Clicking Tree Nodes for View by Customers, page 11-88 lists the right mouse click options enabled for tree nodes when you view by customers.

The following figure shows the Planner Workbench navigation tree hierarchy when you choose to view by Customers.

**Navigation Tree Hierarchy for View by Customers**



The following table lists the menu options available on right-clicking tree nodes for view by customers.

<b>Node on Navigation Tree</b>	<b>Options Available by Right-Clicking Tree Node</b>	<b>Options Available by Selecting Multiple Tree Nodes and then Right-Clicking</b>
Plans	<ul style="list-style-type: none"> <li>• Plan Summary</li> <li>• Exceptions (for entire plan)</li> <li>• Performance</li> <li>• Plan Options</li> <li>• Copy Plan</li> <li>• Refresh</li> <li>• Help</li> </ul>	Not Applicable
Customers	<ul style="list-style-type: none"> <li>• Customer Details</li> <li>• Exceptions (for orders or trips for this customer)</li> <li>• Performance</li> <li>• Refresh</li> <li>• Help</li> </ul>	Help

<b>Node on Navigation Tree</b>	<b>Options Available by Right-Clicking Tree Node</b>	<b>Options Available by Selecting Multiple Tree Nodes and then Right-Clicking</b>
Customer Facilities	<ul style="list-style-type: none"> <li>• Customer Facility Details</li> <li>• Exceptions</li> <li>• Performance</li> <li>• Map (display facility as well as all trips going from, stopping at, or coming into this facility)</li> <li>• Add to Map (display facility as well as all trips going from, stopping at, or coming into this facility)</li> <li>• Refresh</li> <li>• Help</li> </ul>	<ul style="list-style-type: none"> <li>• Map (displays facilities as well as all trips going from, stopping at, or coming into these facilities)</li> <li>• Add to Map (displays facilities as well as all trips going from, stopping at, or coming into these facilities)</li> <li>• Refresh</li> <li>• Help</li> </ul>
Orders	<ul style="list-style-type: none"> <li>• Order Details (orders filtered by this customer facility)</li> <li>• Exceptions</li> <li>• Refresh</li> <li>• Help</li> </ul>	Help

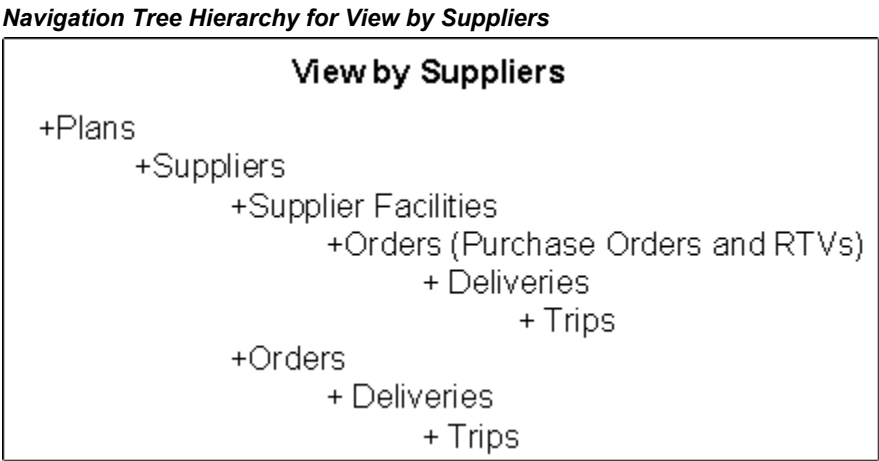
Node on Navigation Tree	Options Available by Right-Clicking Tree Node	Options Available by Selecting Multiple Tree Nodes and then Right-Clicking
Deliveries	<ul style="list-style-type: none"> <li>• Delivery Details</li> <li>• Exceptions</li> <li>• Map (all the trips that the delivery travels on)</li> <li>• Add to Map (all the trips that the delivery travels on)</li> <li>• Unassign Delivery from Trip (enabled, if not unassigned)</li> <li>• Add Delivery to Trip (if unassigned)</li> <li>• Quick Trip Build (if unassigned)</li> <li>• Refresh</li> <li>• Help</li> </ul>	<ul style="list-style-type: none"> <li>• Delivery Details</li> <li>• Exceptions</li> <li>• Map (all the trips that the delivery travels on)</li> <li>• Add to Map (all the trips that the delivery travels on)</li> <li>• Unassign Delivery from Trip (enabled, if not unassigned)</li> <li>• Add Delivery to Trip (if unassigned)</li> <li>• Quick Trip Build (if unassigned)</li> <li>• Refresh</li> <li>• Help</li> </ul>
Trips	<ul style="list-style-type: none"> <li>• Trip Details</li> <li>• Exceptions</li> <li>• Map</li> <li>• Add to Map</li> <li>• Delete Trip</li> <li>• Refresh</li> <li>• Help</li> </ul>	<ul style="list-style-type: none"> <li>• Map</li> <li>• Add to Map</li> <li>• Delete Trip</li> <li>• Refresh</li> <li>• Help</li> </ul>

## View by Suppliers

'Menu Options Available on Right-Clicking Tree Nodes for View by Suppliers, page 11-91 lists the right mouse click options enabled for tree nodes when you view by

suppliers.

The following figure shows the Planner Workbench navigation tree hierarchy when you choose to view by Suppliers.



The following table lists the menu options available on right-clicking tree nodes for view by suppliers.

Node on Navigation Tree	Options Available by Right-Clicking Tree Node	Options Available by Selecting Multiple Tree Nodes and then Right-Clicking
Plans	<ul style="list-style-type: none"><li>Plan Summary</li><li>Exceptions (for entire plan)</li><li>Performance</li><li>Plan Options</li><li>Copy Plan</li><li>Refresh</li><li>Help</li></ul>	Not Applicable

<b>Node on Navigation Tree</b>	<b>Options Available by Right-Clicking Tree Node</b>	<b>Options Available by Selecting Multiple Tree Nodes and then Right-Clicking</b>
Suppliers	<ul style="list-style-type: none"> <li>• Supplier Details</li> <li>• Exceptions</li> <li>• Performance</li> <li>• Refresh</li> <li>• Help</li> </ul>	Help
Supplier Facilities	<ul style="list-style-type: none"> <li>• Supplier Facility Details</li> <li>• Exceptions</li> <li>• Performance</li> <li>• Map (display facility as well as all trip going from, stopping at, or coming into this facility)</li> <li>• Add to Map (display facility as well as all trips going from, stopping at, or coming into this facility)</li> <li>• Refresh</li> <li>• Help</li> </ul>	<ul style="list-style-type: none"> <li>• Map (displays facilities as well as all trips going from, stopping at, or coming into these facilities)</li> <li>• Add to Map (displays facilities as well as all trips going from, stopping at, or coming into these facilities)</li> <li>• Refresh</li> <li>• Help</li> </ul>
Orders	<ul style="list-style-type: none"> <li>• Order Details (orders filtered by this facility)</li> <li>• Exceptions</li> <li>• Refresh</li> <li>• Help</li> </ul>	Help



Node on Navigation Tree	Options Available by Right-Clicking Tree Node	Options Available by Selecting Multiple Tree Nodes and then Right-Clicking
Deliveries	<ul style="list-style-type: none"> <li>• Delivery Details</li> <li>• Exceptions</li> <li>• Map (all the trips that the delivery travels on)</li> <li>• Add to Map (all the trips that the delivery travels on)</li> <li>• Unassign Delivery from Trip (enabled, if not unassigned)</li> <li>• Add Delivery to Trip (if unassigned)</li> <li>• Quick Trip Build (if unassigned)</li> <li>• Refresh</li> <li>• Help</li> </ul>	<ul style="list-style-type: none"> <li>• Map (all the trips that the delivery travels on)</li> <li>• Add to Map (all the trips that the delivery travels on)</li> <li>• Refresh</li> <li>• Help</li> </ul>
Trips	<ul style="list-style-type: none"> <li>• Trip Details</li> <li>• Exceptions</li> <li>• Map</li> <li>• Add to Map</li> <li>• Actions: Delete Trip</li> <li>• Refresh</li> <li>• Help</li> </ul>	<ul style="list-style-type: none"> <li>• Map</li> <li>• Add to Map</li> <li>• Delete Trip</li> <li>• Refresh</li> <li>• Help</li> </ul>

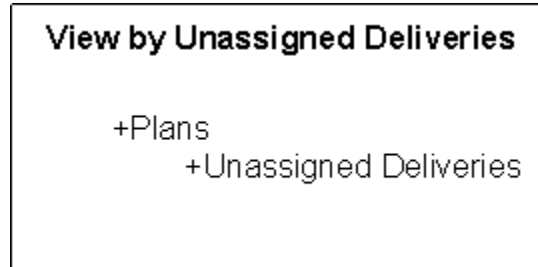
## View by Unassigned Deliveries

'Menu Options Available on Right-Clicking Tree Nodes for View by Unassigned Deliveries, page 11-94 lists the right mouse click options enabled for tree nodes when

you view by unassigned deliveries.

The following figure shows the Planner Workbench navigation tree hierarchy when you choose to view by Unassigned Deliveries.

***Navigation Tree Hierarchy for View by Unassigned Deliveries***



The following table lists the menu options available on right-clicking tree nodes for view by unassigned deliveries.

<b>Node on Navigation Tree</b>	<b>Options Available by Right-Clicking Tree Node</b>	<b>Options Available by Selecting Multiple Tree Nodes and then Right-Clicking</b>
Plan	<ul style="list-style-type: none"><li>• Plan Summary</li><li>• Exceptions (for entire plan)</li><li>• Performance</li><li>• Plan Options</li><li>• Copy Plan</li><li>• Refresh</li><li>• Help</li></ul>	Not Applicable

Node on Navigation Tree	Options Available by Right-Clicking Tree Node	Options Available by Selecting Multiple Tree Nodes and then Right-Clicking
Unassigned Deliveries	<ul style="list-style-type: none"> <li>• Delivery Details</li> <li>• Exceptions</li> <li>• Map</li> <li>• Add to Map</li> <li>• Quick Trip Build</li> <li>• Refresh</li> <li>• Help</li> </ul>	<ul style="list-style-type: none"> <li>• Map</li> <li>• Add to Map</li> <li>• Refresh</li> <li>• Help</li> </ul>

## View by Facilities

'Menu Options Available on Right-Clicking Tree Nodes for View by Facilities, page 11-97 lists the right mouse click options enabled for tree nodes when you view by facilities.

The following figure shows the Planner Workbench navigation tree hierarchy when you choose to view by Facilities.

### Navigation Tree Hierarchy for View by Facilities



The following table lists the menu options available on right-clicking tree nodes for view by facilities.

<b>Node on Navigation Tree</b>	<b>Options Available by Right-Clicking Tree Node</b>	<b>Options Available by Selecting Multiple Tree Nodes and then Right-Clicking</b>
Plan	<ul style="list-style-type: none"> <li>• Plan Summary</li> <li>• Exceptions (for entire plan)</li> <li>• Performance</li> <li>• Plan Options</li> <li>• Copy Plan</li> <li>• Refresh</li> <li>• Help</li> </ul>	Not Applicable
All My Facilities	<ul style="list-style-type: none"> <li>• Exceptions</li> <li>• Refresh</li> <li>• Help</li> </ul>	Not Applicable
My Facilities	<ul style="list-style-type: none"> <li>• My Facility Details</li> <li>• Exceptions</li> <li>• Performance</li> <li>• Map (all trips to or from the facility)</li> <li>• Add to Map (all trips involving the facility)</li> <li>• Refresh</li> <li>• Help</li> </ul>	<ul style="list-style-type: none"> <li>• Map (all trips involving the facilities)</li> <li>• Add to Map (all trips involving the facilities)</li> <li>• Refresh</li> <li>• Help</li> </ul>

<b>Node on Navigation Tree</b>	<b>Options Available by Right-Clicking Tree Node</b>	<b>Options Available by Selecting Multiple Tree Nodes and then Right-Clicking</b>
Orders	<ul style="list-style-type: none"> <li>• Order Details</li> <li>• Exceptions</li> <li>• Refresh</li> <li>• Help</li> </ul>	Help
Deliveries	<ul style="list-style-type: none"> <li>• Delivery Details</li> <li>• Exceptions</li> <li>• Map (all the trips that the delivery travels on)</li> <li>• Add to Map (all the trips that the delivery travels on)</li> <li>• Unassign Delivery from Trip (enabled, if not unassigned)</li> <li>• Add Delivery to Trip (if unassigned)</li> <li>• Quick Trip Build (if unassigned)</li> <li>• Refresh</li> <li>• Help</li> </ul>	<ul style="list-style-type: none"> <li>• Map (all trips that the deliveries travel on)</li> <li>• Add to Map (all trips that the deliveries travel on)</li> <li>• Refresh</li> <li>• Help</li> </ul>

<b>Node on Navigation Tree</b>	<b>Options Available by Right-Clicking Tree Node</b>	<b>Options Available by Selecting Multiple Tree Nodes and then Right-Clicking</b>
Trips	See 'Menu Options Available on Right-Clicking Tree Nodes for View by Trips, page 11-76	See 'Menu Options Available on Right-Clicking Tree Nodes for View by Trips, page 11-76
All Trips		
All Truckloads		
Truckloads		
Trip Legs		
Deliveries		
Trip Stops		
All LTLs		
LTLs		
All Parcels		
Parcels		
All Customers	<ul style="list-style-type: none"> <li>• Exceptions</li> <li>• Performance</li> <li>• Refresh</li> <li>• Help</li> </ul>	Not Applicable
Customers	<ul style="list-style-type: none"> <li>• Customer Details</li> <li>• Exceptions</li> <li>• Performance</li> <li>• Refresh</li> <li>• Help</li> </ul>	Help

<b>Node on Navigation Tree</b>	<b>Options Available by Right-Clicking Tree Node</b>	<b>Options Available by Selecting Multiple Tree Nodes and then Right-Clicking</b>
Customer Facilities	<ul style="list-style-type: none"> <li>• Customer Facility Details</li> <li>• Exceptions (for trips going to or from this customer facility)</li> <li>• Performance</li> <li>• Map</li> <li>• Add to Map</li> <li>• Refresh</li> <li>• Help</li> </ul>	<ul style="list-style-type: none"> <li>• Map</li> <li>• Add to Map</li> <li>• Refresh</li> <li>• Help</li> </ul>
All Suppliers	<ul style="list-style-type: none"> <li>• Exceptions</li> <li>• Performance</li> <li>• Refresh</li> <li>• Help</li> </ul>	Not Applicable
Suppliers	<ul style="list-style-type: none"> <li>• Supplier Details</li> <li>• Exceptions</li> <li>• Performance</li> <li>• Refresh</li> <li>• Help</li> </ul>	Help



<b>Node on Navigation Tree</b>	<b>Options Available by Right-Clicking Tree Node</b>	<b>Options Available by Selecting Multiple Tree Nodes and then Right-Clicking</b>
Supplier Facilities	<ul style="list-style-type: none"> <li>• Supplier Facility Details</li> <li>• Exceptions</li> <li>• Performance</li> <li>• Map (display facility as well as all trips going from, stopping at, or coming into this facility)</li> <li>• Add to Map</li> <li>• Refresh</li> <li>• Help</li> </ul>	<ul style="list-style-type: none"> <li>• Map (display facility as well as all trips going from, stopping at, or coming into this facility)</li> <li>• Add to Map</li> <li>• Refresh</li> <li>• Help</li> </ul>
All Carriers	<ul style="list-style-type: none"> <li>• Exceptions</li> <li>• Performance</li> <li>• Refresh</li> <li>• Help</li> </ul>	Not Applicable

<b>Node on Navigation Tree</b>	<b>Options Available by Right-Clicking Tree Node</b>	<b>Options Available by Selecting Multiple Tree Nodes and then Right-Clicking</b>
Carriers	<ul style="list-style-type: none"> <li>Carrier Details</li> <li>Exceptions</li> <li>Performance</li> <li>Map (displays trips coming into, stopping at, and going out of all of this carrier's facilities)</li> <li>Add to Map (displays trips coming into, stopping at, and going out of all of this carrier's facilities)</li> <li>Refresh</li> <li>Help</li> </ul>	<ul style="list-style-type: none"> <li>Map (displays trips coming into, stopping at, and going out of all of this carrier's facilities)</li> <li>Add to Map (displays trips coming into, stopping at, and going out of all of this carrier's facilities)</li> <li>Refresh</li> <li>Help</li> </ul>
Carrier Facilities	<ul style="list-style-type: none"> <li>Carrier Facility Details</li> <li>Exceptions</li> <li>Performance</li> <li>Map (displays trips coming into, stopping at, and going out of this facility regardless of their carrier)</li> <li>Add to Map (displays trips coming into, stopping at, and going out of this facility regardless of their carrier)</li> <li>Refresh</li> <li>Help</li> </ul>	<ul style="list-style-type: none"> <li>Map (displays trips coming into, stopping at, and going out of this facility regardless of their carrier)</li> <li>Add to Map (displays trips coming into, stopping at, and going out of this facility regardless of their carrier)</li> <li>Refresh</li> <li>Help</li> </ul>

## View by Exceptions

For each node on the View by Exceptions hierarchy, a single right mouse click action is enabled: Exceptions. Selecting Exceptions opens the Exceptions and Recommendations window. Each Plan node expands to show the Exception Group nodes including Late and Early Exceptions, Trip and Order Exceptions, Carrier Exceptions, Timing Exceptions, Cost Exceptions, Vehicle Exceptions, Facility Exceptions, Trading Partner Exceptions, Unplanned Deliveries, and Unplanned Delivery Lines. Each Exception Group node expands to show all the exception types in the group.

The following figure shows the Planner Workbench navigation tree hierarchy when you choose to view by Exceptions.

**Navigation Tree Hierarchy for View by Exceptions**



## Menu Options Available by Right-Clicking Multiple Tree Nodes

The following table presents the options available when you perform a right-click for more complex scenarios of selections made on the navigation tree.

Selection on Navigation Tree	Options Available by Selecting Multiple Tree Nodes and Right-Clicking
------------------------------	---

Selection on Navigation Tree	Options Available by Selecting Multiple Tree Nodes and Right-Clicking
Two or more truckloads	<ul style="list-style-type: none"> <li>• Map</li> <li>• Add to Map</li> <li>• Delete Trip</li> <li>• Help</li> </ul>
Two or more less-than-truckloads	<ul style="list-style-type: none"> <li>• Map</li> <li>• Add to Map</li> <li>• Delete Trip</li> <li>• Help</li> </ul>
Two or more parcels	<ul style="list-style-type: none"> <li>• Map</li> <li>• Add to Map</li> <li>• Delete Trip</li> <li>• Combine</li> <li>• Help</li> </ul>
Two or more continuous moves	<ul style="list-style-type: none"> <li>• Map</li> <li>• Add to Map</li> <li>• Dissolve Continuous Move</li> <li>• Help</li> </ul>

Selection on Navigation Tree	Options Available by Selecting Multiple Tree Nodes and Right-Clicking
One truckload, one less-than-truckload	<ul style="list-style-type: none"> <li>• Map</li> <li>• Add to Map</li> <li>• Add Shipment to Trip</li> <li>• Delete Trip</li> <li>• Help</li> </ul>
One truckload, one parcel	<ul style="list-style-type: none"> <li>• Map</li> <li>• Add to Map</li> <li>• Add Shipment to Trip</li> <li>• Delete Trip</li> <li>• Help</li> </ul>
One truckload, one continuous move	<ul style="list-style-type: none"> <li>• Map</li> <li>• Add to Map</li> <li>• Help</li> </ul>
One less-than-truckload, one parcel	<ul style="list-style-type: none"> <li>• Map</li> <li>• Add to Map</li> <li>• Delete Trip</li> <li>• Combine</li> <li>• Help</li> </ul>
One or more less-than-truckload moves, one or more continuous moves	<ul style="list-style-type: none"> <li>• Map</li> <li>• Add to Map</li> </ul>

Selection on Navigation Tree	Options Available by Selecting Multiple Tree Nodes and Right-Clicking
Parcel, continuous move	<ul style="list-style-type: none"> <li>• Map</li> <li>• Add to Map</li> </ul>
Multiple TL - LTL - Parcel - Continuous Move	<ul style="list-style-type: none"> <li>• Map</li> <li>• Add to Map</li> <li>• Delete Trip</li> <li>• Help</li> </ul>
Vehicle Trip Leg (s)	<ul style="list-style-type: none"> <li>• Map</li> <li>• Add to Map</li> <li>• Help</li> </ul>
Deliveries	<ul style="list-style-type: none"> <li>• Map</li> <li>• Add to Map</li> <li>• Help</li> </ul>
Stops	<ul style="list-style-type: none"> <li>• Map</li> <li>• Add to Map</li> <li>• Help</li> </ul>
Carriers	<ul style="list-style-type: none"> <li>• Map</li> <li>• Add to Map</li> <li>• Help</li> </ul>

## Menu Options Available by Right-Clicking Map Entities

The following table lists the actions enabled when you right click different map entities.

Map Entity	Options Available by Right-Clicking Selected Map Entity
Truckload	<ul style="list-style-type: none"><li>• Truckload Details</li><li>• Exceptions</li><li>• Hide</li><li>• Fit Map to Selection</li><li>• Add Shipment to Trip (enabled only when shipment is also selected on map)</li><li>• Delete Trip</li><li>• Refresh</li><li>• Help</li></ul>
Less-than-Truckload	<ul style="list-style-type: none"><li>• LTL Details</li><li>• Exceptions</li><li>• Hide</li><li>• Fit Map to Selection</li><li>• Add to TL (enabled if truckload is also selected on map)</li><li>• Add Shipment to Trip (enabled only when shipment is also selected on map)</li><li>• Delete Trip</li><li>• Refresh</li><li>• Help</li></ul>

Map Entity	Options Available by Right-Clicking Selected Map Entity
Parcel	<ul style="list-style-type: none"> <li>Parcel Details</li> <li>Exceptions</li> <li>Hide</li> <li>Fit Map to Selection</li> <li>Add to TL (enabled if truckload is also selected on map)</li> <li>Add Shipment to Trip (enabled only when shipment is also selected on map)</li> <li>Delete Trip</li> <li>Refresh</li> <li>Help</li> </ul>
Continuous Move	<ul style="list-style-type: none"> <li>Continuous Move Details</li> <li>Exceptions</li> <li>Hide</li> <li>Fit Map to Selection</li> <li>Dissolve Continuous Move</li> <li>Refresh</li> <li>Help</li> </ul>



Map Entity	Options Available by Right-Clicking Selected Map Entity
Stop or Facility	<ul style="list-style-type: none"> <li>• Details (Facility Details)</li> <li>• Exceptions (for all the exceptions on any trips that stop at the facility)</li> <li>• Performance</li> <li>• Hide (all trips stopping at facility will disappear)</li> <li>• Fit Map to Selection</li> <li>• Create Trip (enabled if two facilities are selected on the map)</li> <li>• Delete Stop from Trip</li> <li>• Refresh</li> <li>• Help</li> </ul>
Unassigned Delivery	<ul style="list-style-type: none"> <li>• Unassigned Delivery Details</li> <li>• Exceptions</li> <li>• Hide</li> <li>• Fit Map to Selection</li> <li>• Add Delivery to Trip (enabled if a trip is also selected on the map)</li> <li>• Quick Trip Build (note that you will have to first select the View By Unassigned deliveries so that unassigned deliveries show up on the map)</li> <li>• Refresh</li> <li>• Help</li> </ul>

For a facility or stop, the Fit Map to Selection action is equivalent to selecting all of the

trips into or out of, or through the facility, and choosing the Fit Map to Selection function. Fit Map to Selection re-centers the map and zooms in to show these items.

If you have multiple trips stopping at a facility, then the Delete Stop from Trip action produces a list of values of trips. You can select the trip from which to remove the stop.

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## Modifying and Improving Plans

This chapter covers the following topics:

- Overview of Tools in Oracle Transportation Planning
- Finding Savings Opportunities
- Finding Best Candidates for Release
- Finding Unassigned Deliveries
- Tools to Modify Plans

### Overview of Tools in Oracle Transportation Planning

Oracle Transportation Planning provides tools to seek out additional savings opportunities after a plan has been run, to find deliveries that are not assigned to any trip, and to identify the best candidates for release to the transportation execution system.

The Find Savings Opportunities tools help you evaluate the plan output for truckloads with most space and most expensive less-than-truckload trips. You can use these tools to identify ways of optimizing these trips and generating additional savings, such as by finding unassigned deliveries to assign to under-utilized trips.

The Find Release Candidates tool helps you find the best candidates for release based on time criticality and vehicle capacity utilization of trips.

The Find Unassigned Deliveries tool enables you to find deliveries in a plan that have not been assigned to any trip. The tool helps you to find trips to which you can possibly assign such a delivery and also to create a new trip to assign this delivery to.

In addition, Oracle Transportation Planning provides you the flexibility to manually adjust a plan using tools such as Create Trip, Delete Trip, Delete Stop, and Add Shipment to Trip.

This chapter explains the use of these tools in detail.

**Note:** All Truckload Details, LTL Details, Parcel Details, and Continuous Move Details windows show the User Edit check box. Whether or not the User Edit check box appears checked is determined by the manual actions you perform on the plan. While the Release check box, which also appears on these windows, is editable, you cannot manually update the User Edit check box. The User Edit check box is updated by the system depending on your manual modifications to the plan.

## Finding Savings Opportunities

Oracle Transportation Planning enables you to find additional savings when the following opportunities exist:

- Truckloads with available space
- Expensive less-than-truckload trips

The following sections describe the tools that Oracle Transportation Planning provides to find additional savings opportunities in the plan:

- Finding Truckloads with Most Space, page 12-2
- Finding Most Expensive Less-than-Truckload Trips, page 12-7

**Note:** When you perform any Find Opportunities, Resolve, or Reassign action that finds truckload trips to add a shipment to, the planning system will not consider deadhead trips in continuous moves as candidates.

## Finding Truckloads with Most Space

The planning system provides you with a list of truckloads in the descending order of most space (lowest utilization). Selecting a trip and then choosing the Find Opportunities button finds less-than-truckload trips, parcel trips, or unassigned deliveries that can fit into this vehicle based on the desired utilization percentage.

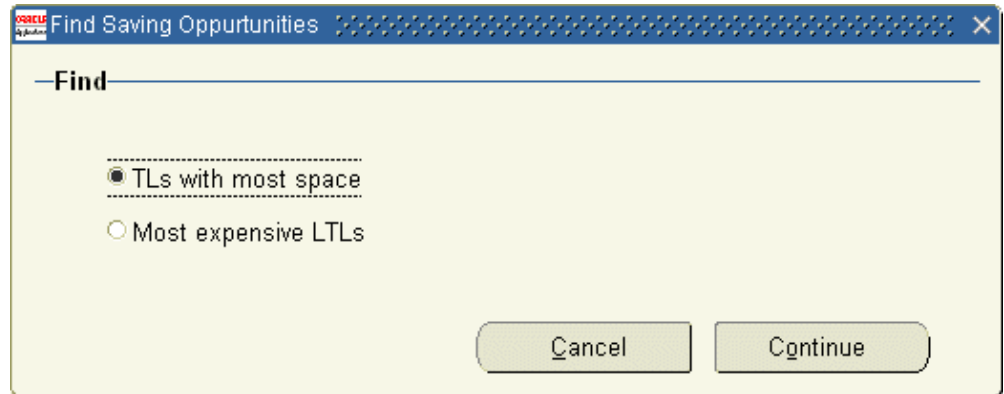
Use the following procedure to find truckloads with most space and to find opportunities that can improve capacity utilization.

**To find truckloads with most space and improve their utilization:**

1. On the navigation tree on the Planner Workbench, select the plan for which you want to explore additional savings opportunities.

2. Select Find Savings Opportunities from the Tools menu or click the Find Savings Opportunities icon on the toolbar. The Find Saving Opportunities window opens.

**Find Savings Opportunities Window**



3. Select the option TLs with most space and click Continue.

Most space means lowest utilization. The utilization of a trip is the maximum of its maximum weight utilization percentage, maximum cube utilization percentage, and maximum pallet utilization percentage.

The Find Opportunities Wizard - Find TLs with Most Space window appears showing a list of truckloads in the Trips block with trips listed in the descending order of space available. The window displays the stops and legs information in the Trip Stops and Legs block.

4. Select a trip and then click Find Opportunities.

**Note:** You cannot make any changes to a Routing and Contents Firm trip. The system generates a warning if you select a Routing and Contents Firm trip.

If you selected a trip that is Not Firm or is Routing Firm, then choosing Find Opportunities opens a window prompting you to enter the utilization factor for the under-utilized truck. The default value for Utilization Factor is 100%.

Note that Utilization Factor \* effective volume capacity must not be greater than the absolute volume capacity of the vehicle.

### Find Opportunities Window

**Find Opportunities**

---

**Find**

Find shipments to add to the underutilized trip.

Select Continue to return all LTLs, parcels, and unassigned orders for which:

$$\text{TL Load Size} + \text{Returned Shipment Size} \leq \text{Utilization Factor} * \text{Effective Capacity}$$

Utilization Factor  %

5. After entering the utilization factor, click Continue to return to the Find Opportunities Wizard - Find TLs with Most Space window. The Opportunities block of the window is now populated with less-than-truckload trips, parcel trips, and unassigned deliveries that can fit into the under-utilized truckload trip.

### Find Opportunities Wizard - Find Tls with Most Space Window

Find Opportunities Wizard - Find Tls with most space

**-Trips**

Trip	Carrier	Origin Company	Origin City	Origin State	Destination Com
45	JB Hunt	My Company	Sacramento	CA	Acme Home St
41	Schneider	My Company	Gadsden	AL	Desert Home
39	JB Hunt	My Company	Raleigh	NC	Dynamic Furnish
43	CRST	My Company	Gadsden	AL	Southern Whole
40	CRST	My Company	Raleigh	NC	Dynamic Furnish

Find Opportunities Trip Details

**-Trip Stops and Legs**

Stops Legs

Stop	Company	Facility	City	State	Arrival
1	My Company	ACE PRODUCTS ...	Sacramento	CA	06-FEB-2006 17:00 PST
2	My Company	ACE PRODUCTS ...	Provo	UT	07-FEB-2006 16:59 MST
3	Acme Home St...	ACME SPF	Springfield	MO	09-FEB-2006 11:30 CST

Stop Details

**-Opportunities** Utilization % **110**

Select Analyze to calculate cost impact and exceptions for a selected trip/delivery or Add to Trip to implement the change.

Trip/Delivery	Mode	Origin Company	Origin City	Origin State	Destination Co
46	LTL	My Company	Provo	UT	Fast Furnitur
47	LTL	My Company	Raleigh	NC	Southern Who
48	LTL	My Company	Gadsden	AL	Dynamic Furni
49	LTL	My Company	Sacramento	CA	Desert Home

Back Cancel Select All Details Map Add to Trip Analyze

If the planning system finds no opportunity based on specified utilization factor, then the system returns a message stating that no opportunities were found.

If the selected trip was Routing Firm, then the system retrieves only those less-than-truckload trips, parcel trips, or unassigned deliveries that can be added to the truckload without causing its routing to change. By default, the results are sorted by cube in descending order.

6. Select a shipment from the Opportunities block and click Analyze. This initiates cost and exception calculations. If the Online Planner is not already running, the system submits a request to start it.

Before proceeding to analyze the savings due to adding a shipment, you may check the details of any shipment using the Details button. Selecting a shipment and clicking Details opens the corresponding Details window. The system does not allow multi-selection of these shipments.

**Note:** You may also select a shipment and click the Add to Trip button to directly add the shipment to the trip with space without first calculating costs or exceptions. Analyzing the cost and exceptions beforehand enables you to either avoid or be aware of potential exceptions.

When you click Analyze, a progress bar indicates the progress of the calculations. When the calculations are complete, the Analyze: Add to Trip window appears showing the cost changes due to the addition of the selected shipment to the under-utilized trip and any exceptions generated by the addition of the shipment.

#### Analyze: Add to Trip Window

Review cost impact and exceptions. Select Add to Trip to confirm.

	Trip/Delivery	Type	Weight	Cube
<b>Before</b>	46	LTL	2,700	1
	45	TL	18,240	1
<b>After</b>	46	LTL	0	
	45	TL	20,940	2

Total Cost Before	1,803.13	USD
Total Cost After	1,468.02	USD
Cost Change	335.11	-5 %
Penalty Cost Change	1,407.27	USD

**Exceptions**

Exception
• Trip 45 violates layover rules: driving 12.12 vs. max 11 hrs.; duty 12.12 vs. max 14 hrs.; layover 0 vs. req
Trip 45 violates days/hours of operation at ACE PRODUCTS - SAC_ACE PRODUCTS - SAC.
Trip 45 violates days/hours of operation at Fast Furn - Wichita.
Trip 45 exceeds vehicle capacity: cube 2975/2750 FT3 (108% - vehicle size 0 FT3); weight 20940/42000 l

Back Add to Trip

- To return to the Find Opportunities Wizard - Find TLs with Most Space window without adding the selected shipment to the trip, click Back.

To add the selected trip to the under-utilized trip first selected, click Add to Trip. A confirmation window indicates the successful addition of the shipment to the previously under-utilized trip.

- Stop the Online Planner if you want to re-calculate exceptions, launch the plan, or



submit any other concurrent request. To stop the Online Planner, select Stop Online Planner from the Plan menu.

## Finding Most Expensive Less-than-Truckload Trips

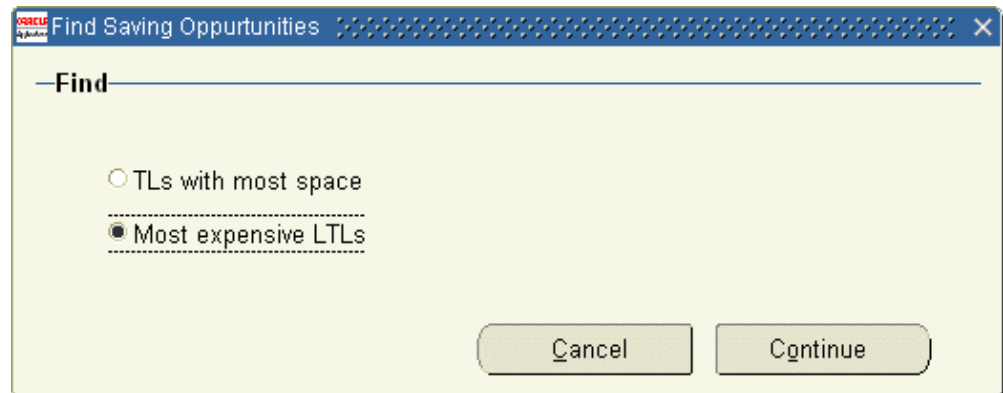
The planning system provides a list of less-than-truckload trips in descending order of cost. Selecting a less-than-truckload trip and then selecting the Find Opportunities button finds truckloads that this less-than-truckload trip can be added to, based on the desired utilization percentage.

Use the following procedure to find the most expensive less-than-truckload trips and to find truckloads that can accommodate such less-than-truckload shipments.

**To find most expensive less-than-truckload trips and analyze savings opportunities:**

1. On the navigation tree on the Planner Workbench, select the plan for which you want to explore additional savings opportunities.
2. From the Tools menu, select Find Savings Opportunities or click the Find Savings Opportunities icon on the toolbar. The Find Saving Opportunities window opens.

### *Find Savings Opportunities Window*



3. Select the option Most Expensive LTLs and click Continue.

The Find Opportunities Wizard - Find Most Expensive LTLs appears showing a list of less-than-truckload trips in the LTLs block with trips listed in descending order of cost. The Opportunities block of the window remains blank.

### Find Opportunities Wizard - Find Most Expensive LTLs Window

Trip	Origin Company	Origin City	Origin State	Destination Company	Destination City
170	My Company	Knoxville	TN	DM Depot	San Diego
160	My Company	Knoxville	TN	PM Mart	New York
159	My Company	Knoxville	TN	PM Mart	New York
167	My Company	Knoxville	TN	CM Mart	Magee
161	My Company	Knoxville	TN	PM Mart	New York
158	My Company	Knoxville	TN	My Company	Casper

Find Opportunities    LTL Details

**Opportunities**    Utilization %

Select Analyze to calculate cost impact and exceptions for a selected trip or Add to Trip to implement the change.

Trip	Origin Company	Origin City	Origin State	Destination Company	Destination City
------	----------------	-------------	--------------	---------------------	------------------

Back    Cancel    Select All    Details    Map    Add to Trip    Analyze

4. Select a less-than-truckload trip and then click Find Opportunities.

**Note:** You cannot make any changes to a Routing and Contents Firm less-than-truckload trip. The system generates a warning if the less-than-truckload trip you select is Routing and Contents Firm.

If the trip selected is Not Firm, then clicking Find Opportunities opens a window prompting you to enter the utilization factor for trucks that may accommodate this less-than-truckload. The default value for the Utilization Factor is 100%.

5. After entering the Utilization Factor, click Continue to return to the Find Opportunities Wizard - Find Most Expensive LTLs window. The Opportunities block of this window is now populated with truckloads that can accommodate this less-than-truckload shipment.

### Find Opportunities Wizard - Find Most Expensive LTLs Window

**LTLs**

Trip	Origin Company	Origin City	Origin State	Destination Company	Destination City
170	My Company	Knoxville	TN	DM Depot	San Diego
160	My Company	Knoxville	TN	PM Mart	New York
159	My Company	Knoxville	TN	PM Mart	New York
167	My Company	Knoxville	TN	CM Mart	Magee
161	My Company	Knoxville	TN	PM Mart	New York
158	My Company	Knoxville	TN	My Company	Casper

Find Opportunities LTL Details

**Opportunities** Utilization % **110**

Select Analyze to calculate cost impact and exceptions for a selected trip or Add to Trip to implement the change.

Trip	Origin Company	Origin City	Origin State	Destination Company	Destination City
127	My Company	Knoxville	TN	CM Mart	Magee
128	My Company	Knoxville	TN	CM Mart	Magee
157	My Company	Knoxville	TN	CM Mart	Magee

Back Cancel Select All Details Map Add to Trip Analyze

The resulting truckloads cannot be Routing and Contents Firm. The resulting list contains Not Firm and Routing Firm truckloads. The system retrieves only those Routing Firm truckloads to which the less-than-truckload shipment can be added without changing the itinerary of the truckload trip.

If the system finds no opportunities based on the specified utilization factor, then it returns a message stating that no opportunities were found.

6. Select a truckload from the Opportunities block and click Analyze. This initiates cost and exception calculations. If the Online Planner is not already running, the system submits a request to start the Online Planner.

Before proceeding to analyze the savings from adding the less-than-truckload shipment to the selected truckload, you may check the details of any truckload using the Details button. Selecting a truckload and choosing Details opens the corresponding Details window. The system does not allow multi-selection of these shipments.

**Note:** You may also select a truckload and click the Add to Trip button to directly add the less-than-truckload shipment to the truckload without first calculating costs or exceptions. Analyzing the cost and exceptions beforehand will enable you to either avoid or be aware of potential exceptions.

When you click Analyze, a progress bar indicates the progress of the calculations.

When the calculations are complete, the Analyze: Add to Trip window appears showing the cost changes due to the addition of the less-than-truckload shipment to the truckload trip. The window also shows any exceptions that would be generated due to the addition.

#### Analyze Add to Trip Window

Review cost impact and exceptions. Select Add to Trip to confirm.

	Trip/Delivery	Type	Weight	Cube
<b>Before</b>	170	LTL	1,200	2,10
	157	TL	4,650	
<b>After</b>	170	LTL	0	
	157	TL	5,850	2,10

Total Cost Before	1,125.00	USD
Total Cost After	2,962.24	USD
Cost Change	<1,837.24>	<163> %
Penalty Cost Change	0.00	USD

**Exceptions**

Exception
• Delivery line 187921 delivered late by 9.3 hrs.
Delivery line 187922 delivered late by 465.2 hrs.
Delivery line 187949 delivered early by 1668.0 hrs.
Trip 157 violates hours of service rules: driving 24.0 vs. max 11.0 hrs.; duty 24.0 vs. max 14.0 hrs.; layover 0.0
Trip 157 violates days/hours of operation at PM-Knoxville_PM-Knoxville.

Back Add to Trip

- To return to the Find Opportunities Wizard - Find Most Expensive LTLs window without adding the less-than-truckload shipment to the selected trip, click Back.

To add the less-than-truckload shipment to the selected trip, click Add to Trip. A confirmation window follows the successful addition of the less-than-truckload shipment to the truckload.

- Stop the Online Planner if you want to re-calculate exceptions, launch the plan, or submit any other concurrent request. To stop the Online Planner, select Stop Online Planner from the Plan menu.

## Finding Best Candidates for Release

Transportation plan output includes trips, delivery legs, stops, deliveries, and pricing information. Release is the process of publishing this information from Oracle

Transportation Planning to Oracle Shipping Execution.

You can perform a release in any of the following ways:

- Release entire plan
- Release as per auto-release rules
- Flag trips and continuous moves for release and then release all flagged items
- Release any trip or continuous move directly
- Search for and release the best candidates for release

The Find Release Candidates Tools menu option enables you to find Time Critical Truckload trips, Time Critical Less-than-Truckload or Parcel trips, and High Utilization Truckload trips.

Use the following procedure to find the best candidates for release.

**To find the best candidates for release:**

1. On the navigation tree on the Planner Workbench, select the plan for which you want to find the best release candidates.
2. From the Tools menu, select Find Release Candidates. The Release Candidates window opens. The Release Candidates window contains the following tabs:
  - Time Critical TLs
  - Time Critical LTLs/Parcels
  - High Utilization TLs

**Time Critical Truckloads**

The Time Critical TLs tab displays the truckloads with the least time left before departure in ascending order of time left before departure.

The system calculates the time left for a trip as the Planned Arrival Date and Time at the first stop of the trip minus the current date and time.

### Release Candidates Window: Time Critical TLs Tab

Plan

Time Critical TLs   Time Critical LTLs/Parcels   High Utilization TLs

Releasing a trip will also release its related trips

Exceptions	Trip	Carrier	Service	Vehicle Type	Origin Company	Origin City
!	32	JB Hunt	STANDARD	53_DV	My Company	Raleigh
!	36	Knight	STANDARD	53_DV	My Company	Provo
	33	Schneider	STANDARD	53_DV	My Company	Gadsden
!	37	CRST	STANDARD	53_DV	My Company	Raleigh
	39	JB Hunt	STANDARD	53_DV	Multiple	Sacramento
!	38	CRST	STANDARD	53_DV	My Company	Gadsden
!	35	JB Hunt	STANDARD	53_DV	Multiple	Sacramento

**Exceptions**

Exception Description

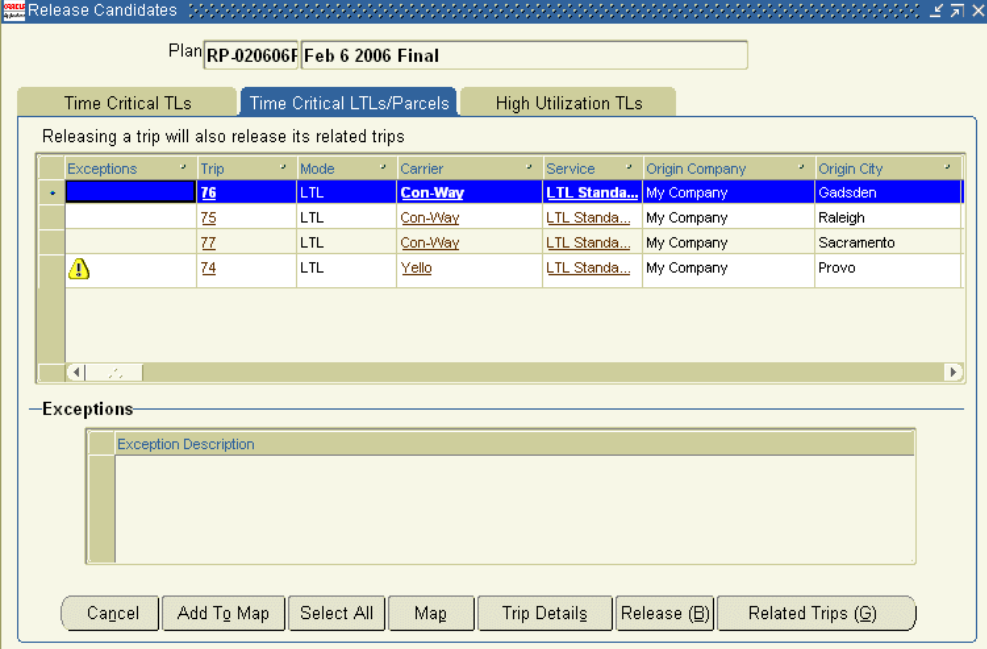
- Trip 32 violates days/hours of operation at ACE PRODUCTS - RALEIGH, ACE PRODUCTS - RALEIGH.
- Trip 32 violates days/hours of operation at Dynamic Furnishings\_6981.

### Time Critical LTLs/Parcels

The Time Critical LTLs/Parcels tab displays the less-than-truckload and parcel trips with the least time left before departure. They are listed in ascending order of time left.

The system calculates the time left for a trip as the Planned Departure Date and Time from the trip's origin minus the current date and time.

### Release Candidates Window: Time Critical LTLs/Parcels Tab



Plan **RP-020606F** Feb 6 2006 Final

Time Critical TLs   **Time Critical LTLs/Parcels**   High Utilization TLs

Releasing a trip will also release its related trips

Exceptions	Trip	Mode	Carrier	Service	Origin Company	Origin City
	<b>76</b>	LTL	<b>Con-Way</b>	<b>LTL Standa...</b>	My Company	Gadsden
	75	LTL	Con-Way	LTL Standa...	My Company	Raleigh
	77	LTL	Con-Way	LTL Standa...	My Company	Sacramento
!	74	LTL	Yello	LTL Standa...	My Company	Provo

—Exceptions—

Exception Description

Cancel   Add To Map   Select All   Map   Trip Details   Release (R)   Related Trips (G)

### High Utilization Truckloads

The High Utilization TLs tab displays the truckloads with the highest utilization. The window lists the truckloads in descending order of utilization percentage.

The utilization of a truckload is equal to the maximum of the trip's peak weight percentage utilization, peak cube percentage utilization, and peak pallet percentage utilization.

### Release Candidates Window: High Utilization TLs Tab

Plan **RP-020606** Plan for 020606

Time Critical TLs   Time Critical LTLs/Parcels   **High Utilization TLs**

Releasing a trip will also release its related trips

Exceptions	Trip	Carrier	Service	Vehicle Type	Origin Company	Origin City
⚠	<b>28</b>	<b>JB Hunt</b>	<b>STANDARD</b>	<b>53_DV</b>	My Company	Sacramento
⚠	24	Schneider	STANDARD	53_DV	My Company	Gadsden
⚠	22	JB Hunt	STANDARD	53_DV	My Company	Raleigh
⚠	26	CRST	STANDARD	53_DV	My Company	Gadsden
	21	Knight	STANDARD	53_DV	My Company	Provo
	23	CRST	STANDARD	53_DV	My Company	Raleigh
⚠	27	JB Hunt	STANDARD	53_DV	My Company	Sacramento

**Exceptions**

Exception Description

- Trip 28 violates layover rules: driving 24 vs. max 11 hrs.; duty 24 vs. max 14 hrs.; layover 0 vs. required 10 hrs.
- Trip 28 violates days/hours of operation at ACE PRODUCTS - SAC\_ACE PRODUCTS - SAC.
- Trip 28 underutilized: cube 1925/2750 FT3 (70%); weight 18240/42000 Lbs (43.4%); pallets 0/60 (0%)

Cancel (J)   Select All   Add To Map (K)   Map (Q)   Details   Release (U)   Related Trips (X)

**Note:** The Time Critical TLs and the Time Critical LTLs/Parcels tabs also display any trips that have been flagged for release earlier, which fit the criteria described here. The tabs do not display any Routing and Contents Firm trip that has a departure date earlier than the system date.

- To view the exceptions associated with a trip, select the trip. Note that only those trip records that have the Exceptions field populated with a warning icon have associated exceptions. When you select such a trip, the exceptions appear in the Exceptions block of the Release Candidates window.
- To view a trip on the map, select the trip and then click Map. When you perform this action, the system erases any earlier information on the Map window.
- To add a trip to an existing open Map window, select the trip and then click the Add to Map button. The previously existing information on the open Map window remains as is when you perform the Add to Map action. You can select one or more trips at a time to add to the map.
- To view the details of a trip, select a trip and then click Trip Details. This opens the corresponding Details window, such as Truckload Details or LTL Details.
- To view trips related to a trip, select a trip and then click Related Trips. The Related



Trips window opens. If the selected trip does not have any related trips, the system indicates this when you click the Related Trips button.

8. To release a trip, select a trip and then click Release. This action releases the selected trip and also any of its related trips. You can select multiple trips for release at the same time. A confirmation window conveys the request information for the release of a trip. For more information on the release process, see 'Releasing Plan Output for Execution, page 16-1.

## Finding Unassigned Deliveries

The planning engine provides you with a list of deliveries that are not assigned to any trip. The system also provides details of these unassigned deliveries, such as origin, destination, available to ship dates, allowed delivery dates, weight, cube, pallets, pieces, and orders. You can perform a quick trip build for these unassigned deliveries or find existing truckloads with space on them to assign these deliveries to.

Use the following procedure to find deliveries that are not assigned to any trip.

### To find unassigned deliveries:

1. On the navigation tree of the Planner Workbench, select the plan for which you want to find unassigned deliveries.
2. From the Tools menu, select Find Unassigned Deliveries. The Find Unassigned Deliveries window opens showing all the unassigned deliveries in the plan.

### Find Unassigned Deliveries Window

Delivery	Origin Company	Origin City	Origin State	Destination Company	Destination
9	My Company	Raleigh	NC	Southern Wholesalers	Orl
13	My Company	Raleigh	NC	Dynamic Furnishings	Utic
14	My Company	Provo	UT	Fast Furniture	Wic
15	My Company	Provo	UT	Acme Home Stores	Spr
16	Multiple	Sacramento	CA	Acme Home Stores	Spr

**Opportunities**

Select Analyze to calculate cost impact and exceptions or Add to Trip to implement the change.

Trip	Origin Company	Origin City	Origin State	Destination Company	Destination
------	----------------	-------------	--------------	---------------------	-------------

3. To view the details of an unassigned delivery, select the delivery and then click Delivery Details. The Delivery Details window opens showing details of the delivery including origin and destination, size, dates, content, and itinerary.
4. To automatically create a direct trip to assign the delivery to, select the delivery and click Quick Trip Build. This creates a direct trip from the delivery's origin to its destination. The system assigns the delivery to this trip. Also see 'Quick Trip Building for Unassigned Deliveries, page 12-18.
5. To find existing truckload trips to which you may assign an unassigned delivery, select the delivery and click Find Opportunities. The Find Opportunities window opens. In this window, enter the utilization factor to find existing trips to which this delivery may be added. Enter a utilization factor and click Continue. This populates the Opportunities block of the Find Unassigned Deliveries window with possible trips to which the delivery can be assigned. If no such truckload trips are found, the system returns a message stating that no opportunities were found.

**Note:** When you perform any Find Opportunities, Resolve, or Reassign action that finds truckload trips to add a shipment to, the planning system will not consider deadhead trips in continuous moves as candidates.

6. To view, on the map, a trip to which you can possibly assign the unassigned delivery, select a trip from the Opportunities block and then click the Map button. This opens the Map window displaying the selected trip.
7. To view the details of a truckload trip to which you can possibly assign the unassigned delivery, selecting a trip from the Opportunities block and click Trip Details. The Truckload Details window opens.
8. To analyze a trip for possible assignment of the delivery, select the trip and click Analyze. This initiates cost and exception calculations, the progress of which is indicated by a progress bar. When the calculations are complete, the Analyze: Add to Trip window appears showing the cost changes due to the addition of the delivery to the trip, as well as any exceptions that would be generated.

On the Analyze: Add to Trip window, click Add to Trip to add the unassigned delivery to the trip. A confirmation window follows the successful addition of the delivery to the trip.

**Note:** You may also assign an unassigned delivery to a trip directly without first analyzing costs and exceptions. To do so, on the Find Unassigned Deliveries window, select the trip in the Opportunities block and click Add to Trip. A confirmation window follows the successful assignment of the delivery to the trip.

9. Stop the Online Planner if you want to re-calculate exceptions, launch the plan, or submit any other concurrent request. You can stop the Online Planner by selecting Stop Online Planner from the Plan menu.

## Tools to Modify Plans

The following sections describe the use of Oracle Transportation Planning tools that enable you to manually modify plan output.

- 'Quick Trip Building for Unassigned Deliveries, page 12-18
- 'Creating a Trip Between Two Facilities, page 12-20
- 'Deleting a Trip, page 12-24

- 'Unassigning a Delivery from a Trip, page 12-27
- 'Adding a Shipment to a Trip, page 12-29
- 'Deleting a Stop from a Trip, page 12-35
- 'Dissolving a Continuous Move, page 12-37
- 'Changing Carrier, Service, and Vehicle Type of a Trip, page 12-39
- 'Changing Trip Arrival and Departure Times, page 12-41

## Quick Trip Building for Unassigned Deliveries

The Quick Trip Build functionality enables you to automatically create a trip for an unassigned delivery. This creates a trip from the unassigned delivery's origin to its destination and assigns the delivery to this trip.

Use the following procedure to build a trip to assign an unassigned delivery to.

### To build trips for unassigned deliveries:

1. Find unassigned deliveries using the Tools menu option Find Unassigned Deliveries. The Find Unassigned Deliveries window opens listing all the unassigned deliveries in a selected plan.
2. Use one of the following navigational options to build trips for unassigned deliveries.
  - Select the Quick Trip Build button on the Find Unassigned Deliveries window.
  - Select an unassigned delivery on the map and then click the Create Trip icon.
  - Select an unassigned delivery on the map and then right-click and select Quick Trip Build.
  - Select an unassigned delivery on the navigation tree and then right-click and select Quick Trip Build.
  - Select an unassigned delivery on the navigation tree and then right-click and select the Create Trip menu option.
3. Select Start Online Planner from the Plan menu to start the Online Planner. If the Online Planner is not already running, the system submits a request to start the Online Planner when you click Quick Trip Build.
4. Select an unassigned delivery and then click Quick Trip Build. This automatically creates a trip from the delivery's origin to its destination and assigns the delivery to

the trip. A progress bar indicates the time remaining for completing the changes and calculations involved.

If at least one mode, carrier, service, and (if the mode is truckload) vehicle type exists such that the ship and delivery time windows of this order can be fully respected, then the system selects the lowest cost combination. The system sets the departure date and time of the trip equal to the earliest available to ship date. If no earliest available to ship date exists, the system sets the departure date and time of the trip equal to the beginning of the plan horizon.

If no mode-carrier-service-vehicle type combination exists that respect the time windows, then the planning engine selects the mode-carrier-service-vehicle type combination with the shortest possible transit time, breaking any ties on the basis of lower cost. The departure time and date of the trip is equal to the earliest available to ship date. If no earliest available to ship date exists, the system sets the departure date and time of the trip equal to the beginning of the plan horizon.

5. When the changes and calculations are completed, the Quick Trip Build window appears showing the new mode, carrier, service, vehicle type, departure date and time, arrival date and time, and total cost. The system displays exceptions, if any, that would be generated if the unassigned delivery is assigned to the new trip.

### Quick Trip Build Window

Select Build Trip to assign delivery 2 to a new trip.

<b>New Trip</b>	Mode	TL	
	Carrier	PLC2	
	Service	STANDARD	
	Vehicle Type	PM-PL 53 ft	
	Departure Date, Time	22-JAN-2006 20:41:09	CST
	Arrival Date, Time	26-JAN-2006 00:00:00	PST
	Total Cost	3,496.11	USD

**—Exceptions**

Exception
• Delivery line 202038 delivered early by 6713.0 hrs.
Trip violates days/hours of operation at PM-Bloomington.
Trip underutilized: cube 500/3000 FT3 (17%); weight 1600/44000 Lbs (4%); pallets 0/52 (0%).
Dock capacity of PM-Bloomington exceeded.

Back Build Trip

6. To build the new trip and assign the delivery to the trip, click Build Trip. A confirmation window appears following the successful creation of the trip and assignment of the delivery to the trip. The trip has the specified mode-carrier-service-vehicle type combination.

To return to the Find Unassigned Deliveries window without building the trip and assigning the delivery to the trip, click Back.

7. Stop the Online Planner if you want to re-calculate exceptions, launch the plan, or submit any other concurrent request. To stop the Online Planner, select the Stop Online Planner option from the Plan menu.

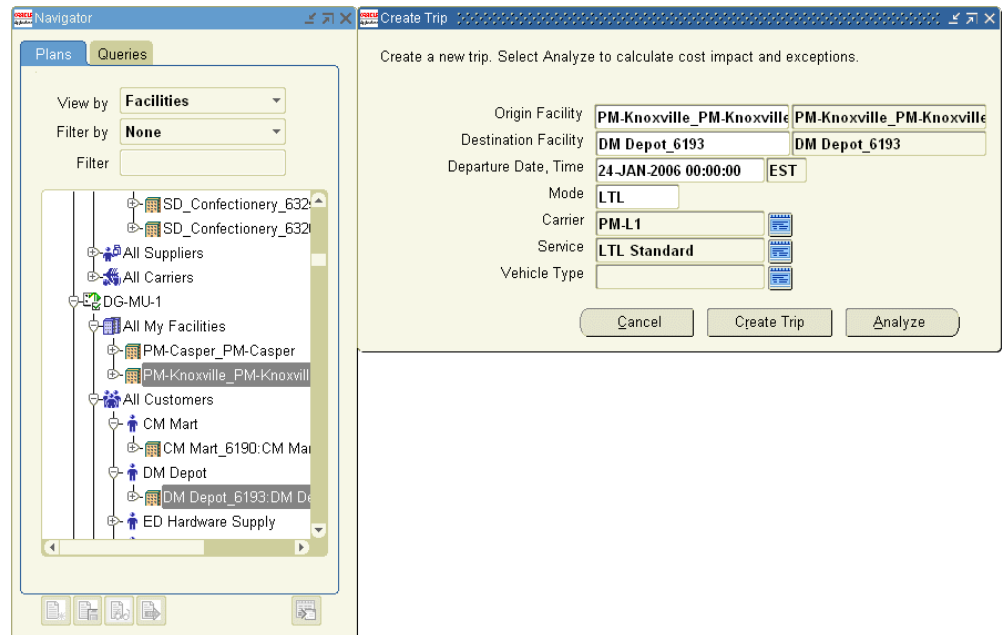
## Creating a Trip Between Two Facilities

Use the following procedure to create a trip between two facilities.

### To create a trip between two facilities:

1. On the navigation tree of the Planner Workbench, select two facilities and then right-click and select the Create Trip option. This opens the Create Trip window.

### Planner Workbench Navigator and Create Trip Window



You may also use the following navigational options:

- Select two facilities on the navigation tree and then select Create Trip from the Actions menu.
- On the map, select two facilities and then the Create Trip icon. Note that you can open the Map window by selecting a facility on the tree and then right-clicking and selecting the Map option.
- On the map, select two facilities and then right-click and select the Create Trip option.

If you select more or less than two facilities, the system prompts you to select exactly two valid facilities.

On the Create Trip window, the following fields are editable:

- Origin Facility
- Destination Facility
- Departure Date
- Departure Time
- Mode

- Carrier (This field is available only after you select the mode.)
- Service
- Vehicle Type

Departure Time Zone is not editable and is populated based on the Origin selection.

2. Edit the carrier, service, and vehicle type as required.

- Click the Edit icon beside the Carrier field to produce a list of values showing carrier-service-vehicle or carrier-service combinations. The system always filters these values for validity in the specified lane.
- Click the Edit icon beside Service to produce a list of values filtered by the chosen carrier.
- If the selected node is Truckload, click the Edit icon beside the Vehicle Type field to produce a list of values filtered by the selected carrier, service, and lane.

3. To initiate cost and exception calculations involved in creating a trip between the specified origin and destination, click Analyze.

When the calculations are completed, the Analyze: Create Trip window appears displaying the arrival date and time and the total cost involved. Potential exceptions, if any, are listed in the Exceptions block of the window.



### Analyze: Create Trip Window

Review cost impact and exceptions. Select Create Trip to confirm.

<b>New Trip</b>	Origin Facility	PM-Knoxville_PM-Knoxville	PM-Knoxville_PM-Knoxville
	Destination Facility	DM Depot_6193	DM Depot_6193
	Departure Date, Time	24-JAN-2006 00:00:00	EST
	Arrival Date, Time	27-JAN-2006 21:00:00	PST
	Mode	LTL	
	Carrier	PM-L1	
	Service	LTL Standard	
	Vehicle Type		
	Total Cost	2.43	USD

**Exceptions**

Exception
• Trip violates days/hours of operation at PM-Knoxville_PM-Knoxville.
Trip violates days/hours of operation at DM Depot_6193.

Back Create Trip

**Note:** You may also directly create a trip between the specified origin and destination without analyzing the cost and exceptions. You can do this by choosing Create Trip on the Create Trip window. A confirmation window follows the successful creation of the trip.

4. To create the trip with details as specified in the Analyze: Create Trip window, click Create Trip. A confirmation window follows the successful creation of the trip.

The new trip thus created is an empty single leg trip between the two specified locations with the specified mode, carrier, service, vehicle type (if the mode is truckload), departure time, and calculated arrival time.

To return to the Create Trip window without creating the trip, click Back.

5. Stop the Online Planner if you want to re-calculate exceptions, launch the plan, or submit any other concurrent request. To stop the Online Planner, select Stop Online Planner from the Plan menu.

## Deleting a Trip

Use the following procedure to delete a trip.

### To delete a trip:

1. On the navigation tree of the Planner Workbench, select a trip node, then right-click and select Delete Trip.

You may also use the following navigational options:

- Select a trip on the navigation tree and then select the Actions menu option Delete Trip.
- Select a trip on the map and then click the Delete Trip icon.
- Select a trip on the map and then right-click and select the Delete Trip option.

You can only delete one trip at a time.

**Note:** You cannot delete a Routing and Contents Firm or Routing Firm trip. If you select such a trip for deletion, the system prompts you to first un-firm the trip.

Also, you cannot delete a trip that is part of a continuous move. You need to dissolve the continuous move before you can delete the trip.

2. The system initiates cost and exception calculations. If the Online Planner is not already running, the system submits a concurrent request to start the Online Planner when you click Delete Trip.

When the calculations are completed, the Delete Trip window appears showing the origin, destination, mode, carrier, service, and vehicle type of the trip selected for deletion. The Delete Trip window also shows exceptions, if any, that the deletion would generate.

### Delete Trip Window

The screenshot shows a window titled "Delete Trip" with a yellow background. At the top, it says "Review exceptions and select Delete Trip to confirm." Below this, there's a section labeled "Delete Trip" with various fields: Trip (41), Origin City, State (Knoxville TN), Destination City, State (San Diego CA), Mode (LTL), Carrier (PM-L1), Service (LTL Standard), and Vehicle Type (empty). Below this is a section labeled "Exceptions" with a list box containing one item: "Delivery 10 is not assigned to any trip." At the bottom right, there are three buttons: "Cancel", "Trip Details", and "Delete Trip".

Review exceptions and select Delete Trip to confirm.	
<b>Delete Trip</b>	Trip
Origin City, State	Knoxville TN
Destination City, State	San Diego CA
Mode	LTL
Carrier	PM-L1
Service	LTL Standard
Vehicle Type	
<b>Exceptions</b>	
Exception	
• Delivery 10 is not assigned to any trip.	
Cancel Trip Details Delete Trip	

3. To view the details of the trip, click Trip Details on the Delete Trip window.
4. To delete the trip, click Delete Trip.

If the deletion is successful, a confirmation window appears.

If dead stops or empty trips are generated due to the deletion, the system prompts you to review the empty trips or dead stops.

**Note:** If the trip being deleted is valid, any deliveries previously assigned to the trip automatically become unassigned.

Also, if any of the orders on the trip have multi-leg itineraries including the deleted trip, the orders are unassigned from the other legs of their itineraries also. This may result in empty trips or dead stops.

5. If the trip deletion generates empty trips or stops, click Yes on the prompt to review the empty trips and dead stops. The Empty Trips and Dead Stops window opens.

### Empty Trips and Dead Stops Window

Trip	Carrier	Origin City	Ori...	Destination Com...	Destination City	De...	
13	LTL	PM-L1	Phoenix	AZ	DM Depot_6192	Sun City	AZ
14	LTL	PM-L1	Phoenix	AZ	SD_Confectionery_...	Prescott	AZ

6. Perform the following actions on the Empty Trips tab of the Empty Trips and Dead Stops window as desired.
  1. To view the details of an empty trip, select the trip and then click Trip Details.
  2. To view an empty trip on the map, select the trip and then click Map.
  3. To add an empty trip to an existing map, select the trip and then click Add to Map.
  4. To delete an empty trip, select the trip and click Delete. If the empty trip is successfully deleted, a confirmation window follows. You may select multiple trips for deletion.
7. Perform the following actions on the Dead Stops tab of the Empty Trips and Dead Stops window as desired.
  1. To view the details of a dead stop, select the stop and then click Stop Details.
  2. To view the entire trip of a dead stop on the map, select the stop and then click Map.
  3. To add the trip of a dead stop to an existing map, select the stop and then click Add to Map. The Map window displays the trip of the dead stop along with the trip that you tried to delete on the Map window.
  4. To delete a dead stop, select the stop and then click Delete. If the dead stop is successfully deleted, a confirmation window follows. You may select multiple

stops for deletion.

8. Stop the Online Planner if you want to re-calculate exceptions, launch the plan, or submit any other concurrent request. To stop the Online Planner, select Stop Online Planner from the Plan menu.

## Unassigning a Delivery from a Trip

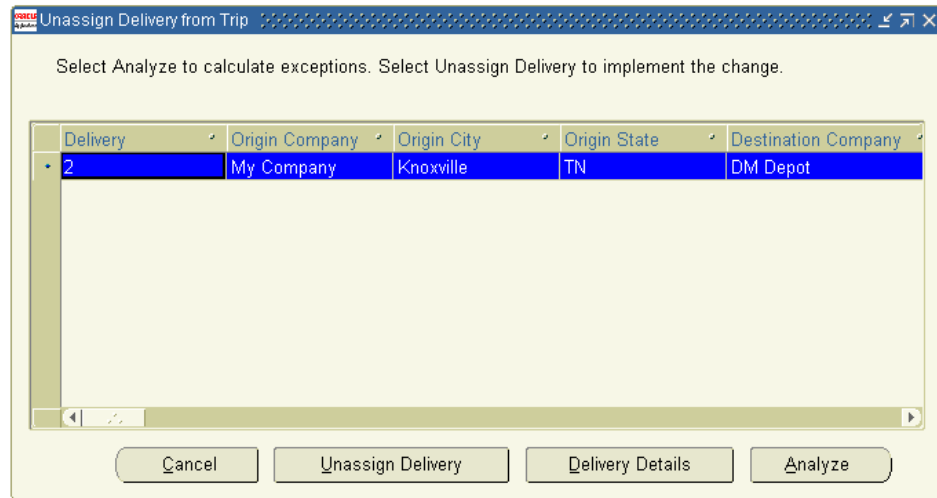
Use the following procedure to unassign a delivery from a trip or trips.

**Note:** Whenever a delivery with a multi-trip itinerary is unassigned, it is unassigned from all of the trips in its itinerary.

### To unassign a delivery from a trip:

1. On the navigation tree of the Planner Workbench, select a delivery and then right-click and select the Unassign Delivery from Trip option. This opens the Unassign Delivery from Trip window subject to the following conditions:
  - The delivery must not be Routing and Contents Firm, which means that the trip or trips the delivery is being unassigned from cannot be Routing and Contents Firm either.
  - You can select only one delivery at a time to unassign from its trip.

### Unassign Delivery from Trip Window



- You may also use the following navigational options:
- Select a delivery on the navigation tree and then select the Actions menu option Unassign Delivery from Trip.
- Select a trip on the map and then click the Unassign Delivery from Trip icon.
- Select a trip on the map and then right-click and select the option Unassign Delivery from Trip.

If one or more deliveries on the selected trip are not firm, the system displays all such deliveries on the Unassign Deliveries from Trip window.

2. To view the details of a delivery before unassigning it, select the delivery and then click Delivery Details.
3. To initiate cost and exception calculations involved in unassigning a delivery from the trip or trips, select the delivery and click Analyze. A progress bar indicates the progress of the calculations.

When the calculations are completed, the Analyze: Unassign Delivery window appears showing the origin and destination of the delivery and any exceptions that would arise due to the delivery being unassigned from its trip or trips.

4. To unassign the delivery from its trip or trips, click Unassign Delivery on the Analyze: Unassign Delivery window. If the delivery is successfully unassigned from the trip or trips, a confirmation window appears.

**Note:** You may also directly unassign a delivery from trips without first running the cost and exception calculations. To do so, select the delivery on the Unassign Deliveries from Trip window and click Unassign Delivery. A confirmation window follows the successful unassignment of the delivery from its trip or trips.

If the delivery has a multi-leg itinerary, the delivery is also unassigned from any other trip it is assigned to.

The system prompts you to review any empty trips and dead stops in the following situations:

- This delivery is the only delivery on any of the trips in its itinerary.
  - After the removal of this delivery, any of the trips in the itinerary of the delivery still has other deliveries, but no longer any activities at any particular stop.
5. Click Yes on the prompt to review any empty trips or dead stops. This opens the Empty Trips and Dead Stops window.
  6. Proceed as explained from Step 5 onward of 'Unassigning a Delivery from a Trip, page 12-27.

## Adding a Shipment to a Trip

Use the following procedure to add a shipment to a trip.

**Note:** When you add a shipment to a trip, the planning engine determines the best order of stops after addition of any required new stop or stops. If the trip being added to is part of a continuous move, the planning engine does not permit the change of location of the first or last stop of the trip. In adding a shipment to a trip in a continuous move, the planning engine checks for the following additional exceptions: Continuous Move Improperly Timed, Continuous Move Maximum Distance, and Continuous Move Maximum Total Time.

### To add a shipment to a trip:

1. On the navigation tree of the Planner Workbench, select two entities and then right-click and select the Add Shipment to Trip option.

You may use the following navigational options:

- Select two entities on the navigation tree and then select the Actions menu option Add Shipment to Trip.

- Select two entities on the map and then click the Add Shipment to Trip icon.
- Select two entities on the map and then right-click and select the Add Shipment to Trip option.

The following combinations of two entities are possible for this action:

- One entity is an unassigned delivery, the other is a parcel or less-than-truckload trip. See 'Scenario 1, page 12-31 for more information.
- One entity is an unassigned delivery, the other is a direct or multi-stop truckload. See 'Scenario 2, page 12-31 for more information.
- Both entities are either parcel or less-than-truckload trips. See 'Scenario 3, page 12-32 for more information.
- One entity is a parcel or less-than-truckload trip, the other is a direct or multi-stop truckload. See 'Scenario 4, page 12-33 for more information.

**Note:** You cannot invoke the Add Shipment to Trip action on the following combinations.

Both the selected entities are unassigned deliveries.

- Both of the selected entities are direct or multi-stop truckloads.
- The selected entities are an unassigned delivery and a parcel or less-than-truckload trip that do not share a common origin and destination.
- The selected entities are an unassigned delivery and a direct or multi-stop truckload and no truckload carrier-service-vehicle type combination is available for the new lane resulting from the addition of the delivery. The addition of the delivery to the truckload requires one or two new stops to be added to the selected direct or multi-stop truckload.
- The selected entities are both parcel or less-than-truckload trips and they do not share the same origin and destination.
- The selected entities are a parcel or less-than-truckload trip and a truckload and no truckload carrier-service-vehicle type combination is available for the new lane resulting from the addition of the parcel or less-than-truckload move to the truckload. The addition of the parcel or



less-than-truckload move requires one or two new stops to be added to the selected truckload.

- The trip selected to add the shipment to is Routing Firm or Routing and Contents Firm.

2. Based on your selection of entities, the following apply:

**Scenario 1**

When one entity is an unassigned delivery and the other is a parcel or less-than-truckload trip

If the unassigned delivery and the parcel or less-than-truckload trip have the same origin and destination, the Add Shipment to Trip action initiates cost and exception calculations. A progress bar indicates the time remaining to make the calculations involved.

When the calculations are completed, the Add Shipment to Trip window appears showing two options of carrier and service to choose from. The exceptions that result when you choose either of these options appear correspondingly in the Exceptions block. The following are the two options you can choose from:

- The lowest cost option for the combined move  
The lowest cost option can be parcel, less-than-truckload, or direct truckload.
- The parcel or less-than-truckload move's existing carrier and service  
Select an option and then click Add to Trip. If the unassigned delivery is successfully added to the trip, a confirmation window follows.

**Scenario 2**

When one entity is an unassigned delivery and the other is a direct or multi-stop truckload

If one entity you select is an unassigned delivery and the other is a direct or multi-stop truckload, the following situations can exist:

1. Adding the unassigned delivery to the truckload requires no new stops.

The delivery is loaded at the truckload's first stop or at a stop other than the truckload's first stop.

If the delivery is loaded at the truckload's first stop, the planning engine adds the unassigned order to the truckload and then re-times the truckload schedule keeping the truck's departure time from the first stop constant.

If the delivery is loaded at a stop other than the truckload's first stop, the system adds the unassigned order to the truckload and then re-times the

truckload as necessary. The planning engine accommodates the new loading and unloading time such that the arrival time at the stop where the delivery is being loaded remains the same as before.

2. Adding the unassigned delivery to the truckload requires one or two new stops.

In this case, the system adds the unassigned delivery to the truckload, adding the new stop or stops necessary. The planning engine times the new stops and re-times any existing stops such that the departure time of the first previously existing stop remains the same.

If a new stop becomes the first or last stop of the truckload, the system checks for any effective change in the truckload's lane and validates the existing carrier, service, and vehicle type for the truckload. If this carrier-service-vehicle type combination is not valid, the planning engine selects the lowest cost valid carrier-service-vehicle type combination.

If no truckload carrier-service-vehicle type combination is available for the new lane, the system returns a message stating that the shipment cannot be added to the trip.

When cost and exception calculations involved in the changes are completed, the Add Shipment to Trip window appears showing the change in Total Cost resulting from the addition of the unassigned delivery to the direct or multi-stop truckload. The window also displays any exceptions that would be generated if these changes are made. If you wish to add the delivery to the trip, click Add to Trip. If the addition is successful, a confirmation window follows.

### Scenario 3

- When both entities are either parcel or less-than-truckload trips

If both entities you select are either parcel trips or less-than-truckload trips, the following situations can exist:

1. The two trips have the same origin and destination.

In this case, step 1 initiates cost and exception calculations. A progress bar indicates the time remaining to make the changes and any calculations involved.

When the calculations are completed, the Add Shipment to Trip window appears showing the following options of carrier and service to choose from. The exceptions that result when you choose any of these options appear in the Exceptions block.

- The lowest cost carrier service for this mode (which may be parcel, less-than-truckload, or direct truckload).

- The existing carrier and service of the first parcel or less-than-truckload trip.
- The existing carrier and service of the second parcel or less-than-truckload trip.

Select an option and then click Add to Trip. If the delivery is successfully added to the trip, a confirmation window follows.

The system combines the two moves into a single move with departure time equal to the earlier of the departure times of the two existing moves. The mode, carrier, and service is the option you chose.

**2. The two moves do not have the same origin-destination pair.**

In this case, step 1 causes the system to return a message stating that the shipment cannot be added to the trip.

**Scenario 4**

When one entity is a parcel or less-than-truckload trip and the other is a direct or multi-stop truckload

If one entity you select is a parcel or less-than-truckload trip and the other is a direct or multi-stop truckload, the following situations can exist:

**1. Adding the delivery legs from the parcel or less-than-truckload move to the truckload requires no new stops.**

In this case, step 1 initiates cost and exception calculations. When the calculation is completed, the Add Shipment to Trip window appears showing the cost and exceptions impact. To add the parcel or less-than-truckload move to the truckload, click Add to Trip. If the parcel or less-than-truckload move is successfully added to the truckload, a confirmation window follows.

If the delivery for the deliveries from the parcel or less-than-truckload trips are being loaded at the truckload's first stop, the system adds the delivery to the truckload without re-timing the truckload and eliminates the parcel or less-than-truckload move.

If the delivery is loaded at a stop other than the truckload's first stop, the system adds the delivery to the truckload, re-timing the truckload as necessary to accommodate new loading or unloading times. The schedule is adjusted such that the truckload's arrival time at the stop where the delivery is loaded, remains the same as

before. It also eliminates the parcel or less-than-truckload move.

2. Adding the delivery from the parcel or less-than-truckload move to the truckload requires one or two new stops.

The Add Shipment to Trip window appears showing cost impact and exceptions that would be generated as a result of this addition.

#### Add Shipment to Trip Window

Analyze: Add to Trip

Review cost impact and exceptions. Select Add to Trip to confirm.

	Trip/Delivery	Type	Weight	Cube
Before	170	LTL	1,200	2,10
	157	TL	4,650	
After	170	LTL	0	
	157	TL	5,850	2,10

Total Cost Before: 1,125.00 USD

Total Cost After: 2,962.24 USD

Cost Change: <1,837.24> <163> %

Penalty Cost Change: 0.00 USD

—Exceptions—

Exception
• Delivery line 187921 delivered late by 9.3 hrs.
Delivery line 187922 delivered late by 465.2 hrs.
Delivery line 187949 delivered early by 1668.0 hrs.
Trip 157 violates hours of service rules: driving 24.0 vs. max 11.0 hrs.; duty 24.0 vs. max 14.0 hrs.; layover 0.0 vs. max 0.0 hrs.
Trip 157 violates days/hours of operation at PM-Knoxville_PM-Knoxville.

Back Add to Trip

If you wish to add the deliveries in the parcel or less-than-truckload trip to the truckload, click Add to Trip. The system then adds the delivery to the truckload, adding the new stop or stops necessary. The system does not consider any additional constraints in determining the new stop sequence.

The system times the new stops and re-times the existing stops such that the departure time of the first previously existing stop remains the same. If a new stop becomes the first or last stop of the truckload, the system validates the existing carrier-service-vehicle type combination against any effective lane change. If the existing carrier-service-vehicle type combination is not valid for the new lane, a dialog box guides you through choosing another valid carrier-service-vehicle type combination.

A confirmation window follows the successful addition of the

parcel or less-than-truckload delivery legs to the truckload.

If no valid carrier-service-vehicle type combinations are found, the system returns a message stating that the shipment cannot be added to the trip.

## Deleting a Stop from a Trip

Use the following procedure to delete a stop from a trip.

### To delete a stop from a trip:

1. On the navigation tree of the planner workbench, select a stop on a truckload that has more than two total stops. Then right-click and select Delete Stop from Trip.

You may also use the following navigational options:

- On the navigation tree of the Planner Workbench, select a stop on a truckload that has more than two total stops and then select the Actions menu option Delete Stop from Trip.
- Select a stop or facility on the map and then click the Delete Stop from Trip icon.
- Select a stop or facility on the map and then right-click and select Delete Stop from Trip.

If you select more than one valid multi-stop truckload stop or a stop that is not part of a multi-stop truckload, the system asks you to select a stop on a truckload with more than two total stops.

The system determines whether or not deleting the stop from the selected trip results in a change of lane of the trip. It also determines whether the existing carrier, service, and vehicle type remains valid.

If the carrier, service, and vehicle type of the existing trip is still valid for the new lane, no change is made to that carrier, service, and vehicle type.

If the carrier, service, and vehicle type of the existing lane is not valid for the new lane, the system selects the lowest cost valid carrier, service, and vehicle type that is valid for the new lane. Note that if no carrier, service, and vehicle type is valid for the new lane, you cannot delete the stop from the trip.

After having selected a valid carrier, service, and vehicle type, the system initiates a cost and exceptions calculation. A progress bar indicates the time remaining for the calculations.

When the cost and exceptions calculations are completed, the Delete Stop from Trip window appears showing the cost impact, carrier, service, and exceptions,

if any, resulting from the change.

### Delete Stop from Trip Window

Review cost impact and exceptions. Select delete stop to confirm.

**Delete stop from TL**

Stop	2
Trip	7
Carrier	PMC2
Service	STANDARD
Stop Location	Phoenix AZ
Total Cost Before	2,658.03 USD
Total Cost After	2,580.24 USD
Cost Change	77.78 USD 3 %
Penalty Cost Change	0 USD

**Exceptions**

- Exception
  - Trip 7 (PMC2 Murray-Sacramento) violates carrier rules - distance:
    - Total distance > max (1985 vs. 2500 MI).
    - Distance between layovers > max (1274 vs. 500 MI).
  - Trip 7 (PMC2 Murray-Sacramento) violates carrier rules - time:
    - Total time > max (39.97 vs. 120 hrs).
    - Driving time > max (24.0 vs. 10.0 hrs).
    - Duty time > max (24.0 vs. 13.0 hrs).

Cancel Delete Stop

2. After reviewing cost impact and exceptions, to delete the stop, click Delete Stop. A confirmation window indicates the successful deletion of the stop from the trip.

Deleting the stop may result in creating empty trips or dead stops, in which case the system prompts you to review these empty trips or dead stops.

3. Click Yes on the prompt to open the Empty Trips and Dead Stops window.
4. Proceed as explained from Step 3 onward of 'Deleting a Stop from a Trip, page 12-35.

If the stop is on a trip that is in a continuous move, the following conditions apply:

- If the stop being deleted is the first stop of the first trip or the last stop of the last trip in the continuous move, the lane of the continuous move may change but the relationships between the trips in the continuous move remain unaffected. In this case, the system performs the same validation of carrier, service, and vehicle type for the continuous move, as it would for a single truckload trip.
- If the stop being deleted is the first stop of any trip except the first trip or the

last stop of any trip except the last trip in the continuous move, the lane of the continuous move does not change, but the connection from a trip to the previous or next trip may be affected. Due to the nature of this situation and the potential to cause a great impact, the system does not allow deletion of the stop. A message appears stating that you cannot delete a connecting stop in a continuous move.

- When neither of the above are true, the lane of the continuous move does not change and the connections between trips are not affected. The system follows the same steps as if the trip were not part of a continuous move.
5. Stop the Online Planner if you want to re-calculate exceptions, launch the plan, or submit any other concurrent request. To stop the Online Planner, select Stop Online Planner from the Plan menu.

## Dissolving a Continuous Move

Use the following procedure to dissolve a continuous move generated by the planning engine.

### To dissolve a continuous move:

1. On the navigation tree of the Planner Workbench, select a continuous move and then right-click and select the Dissolve Continuous Move option.

You may also use the following navigational options:

- On the navigation tree on the Planner Workbench, select a continuous move and then select Dissolve Continuous Move from the Actions menu.
- Select a continuous move on the map and then right-click and select the Dissolve Continuous Move option.
- Select a continuous move on the map and then click the Dissolve Continuous Move icon.

If you perform the Dissolve Continuous Move action after selecting more than one continuous move, the system alerts you to select only one valid continuous move to dissolve.

**Note:** You cannot dissolve a continuous move that is Firm. You must first un-firm the continuous move to dissolve it.

Also, if any of the trips in the continuous move is Routing Firm or Routing and Contents Firm, then you can dissolve the continuous move only if the same carrier-service-vehicle type on the continuous move lane is valid for the lane of the Firm

trip. You cannot dissolve the continuous move if the dissolution requires a change in the carrier-service-vehicle type of any Firm trip in the continuous move.

You cannot dissolve the continuous move if the lane of any trip in the selected continuous move has no valid truckload carrier-service-vehicle type.

If a continuous move is valid for dissolution, the following actions occur:

- The system deletes any empty deadhead trips in the continuous move.
- Any loaded moves in the continuous moves remain in the plan independently.
- For any trip for which the existing carrier-service-vehicle type remains valid, no change is made to the same.
- For any trip for the lane of which the existing carrier-service-vehicle type does not remain valid, the system selects the lowest cost valid truckload carrier-service-vehicle type combination.

If the continuous move is valid to be dissolved, selecting the Dissolve Continuous Move action initiates cost and exception calculations. A progress bar indicates the progress of these calculations.

After the calculations are completed, the Dissolve Continuous Move window appears showing the cost implications and exceptions generated in dissolving the continuous move.



### Dissolve Continuous Move Window

Review cost impact and exceptions. Select Dissolve CM to confirm.

E/L (Empty or loaded)	Trip	Origin	Origin City	Origin S
Loaded	16	ND-Sioux City_ND-Si...	Sioux City	IA
Empty	17	ND-Computer_6640	DENVER	CO
Loaded	18	ND-OKLAHOMA_ND-...	Oklahoma City	OK

Total Cost Before: 1,850.04 USD  
Total Cost After: 2,329.57 USD  
Cost Change: 479.53 <26> %  
Penalty Cost Change: 0.00 USD

**Exceptions**

Exception
• Trip 16 violates days/hours of operation at ND-Sioux City.
Trip 16 violates days/hours of operation at ND-Sioux City.
Trip 16 underutilized: cube 1273/3600 FT3 (35%); weight 43966/44000 Lbs (100%); pallet
Dock capacity of ND-Sioux City exceeded.

Cancel Dissolve CM

- After reviewing the cost impact and exceptions, if you want to proceed with dissolving the continuous move, click Dissolve Continuous Move. This breaks the continuous move into individual trips. If the dissolution is successful, a confirmation window follows.
- Stop the Online Planner if you want to re-calculate exceptions, launch the plan, or submit any other concurrent request. To stop the Online Planner, from the Plan menu, select Stop Online Planner.

### Changing Carrier, Service, and Vehicle Type of a Trip

Use the following procedure to change the carrier, service, and vehicle type assigned to an existing trip.

**Note:** A change in the carrier, service, or vehicle type of a continuous move applies to all the trips in the continuous move.

**To change the carrier, service, and vehicle type of a trip:**

1. On the navigation tree of the Planner Workbench, select a trip and then right-click and select the trip Details option.  
  
You may also select a trip on the map and then right-click and select the trip Details option.
2. On the trip Details window, click the pencil icon beside the corresponding field to change the carrier, service, or vehicle type.
  - In the Truckload Details, LTL Details, and Parcel Details windows, clicking the pencil icons beside the fields result in the following.

**Note:** Vehicle Type applies only to truckload trips. In the LTL Details and Parcel Details windows, you can update only the Carrier and Service fields.

- Carrier field: The system finds all available carrier-service-vehicle type options on the lane of the trip.
  - Service field: The system finds all available service-vehicle type options on the trip's lane for the currently assigned carrier.
  - Vehicle Type field: The system finds all available vehicle type options on the trip's lane for the currently assigned carrier and service.
  - In the case of a continuous move, a change in the carrier, service, or vehicle type applies to all the trips in the continuous move. In the Continuous Move Details window, clicking the pencil icon beside the Carrier, Service, or Vehicle Type fields finds available options in the same manner as for truckloads, but filtered by the lane of the continuous move.
3. Select your option from the list of available options. Each option is a unique carrier-service-vehicle type combination.

This action initiates cost and exception calculations. A progress bar indicates the progress of these calculations. After the calculations are completed, the

Carrier, Service, Vehicle Type window appears showing Trip Summary information before and after the change, cost impact, and exceptions as a result of the change.

### Confirm: Change Carrier, Service, Vehicle Type Window

Confirm: Change Carrier, Service, Vehicle Type

Review cost impact and exceptions. Select OK to confirm.

<b>Before</b>	Carrier	PMC2	Mode	TL
	Service	STANDARD	Vehicle Type	PM-53 ft
	Total Cost	1,250.00	USD	
<b>After</b>	Carrier	PMC4	Mode	TL
	Service	STANDARD	Vehicle Type	PM-MS-48 ft
	Total Cost	1,000.00	USD	
	Cost Change	250.00	20 %	

**Exceptions**

Exception
• Trip 1 violates days/hours of operation at Casper DC.
Trip 1 violates days/hours of operation at PM Mart_PM Mart_6131.
Trip 1 underutilized: cube 1750/2800 FT3 (63%); weight 24200/44000 Lbs (55%); pallets 36/48 (75%).

Cancel OK

4. To replace the existing carrier-service-vehicle type combination with the new one, click OK.
5. To cancel the action, click Cancel. This closes the Confirm: Change Carrier, Service, Vehicle Type window and returns you to the trip Details window.

## Changing Trip Arrival and Departure Times

Use the following procedure to change the arrival or departure time of a trip. You can modify a trip's planned arrival or departure time and review cost and exceptions impact before committing the change.

### To change arrival and departure times of a trip:

1. On the navigation tree of the Planner Workbench, select a trip and then right-click and select the trip Details option.

You may also select a trip on the map and then right-click and select the trip Details option.

2. In the trip Details window

- For a truckload trip, on the Stops tab in the Trip Stops and Legs region, select the link in the Arrival or Departure column corresponding to the stop you want to edit the times for.

**Truckload Details Window**

The screenshot shows the 'Truckload Details (56)' window. At the top, trip information includes Trip 56, Plan PMR3-MS-3, Carrier PMHT, Service TL Standard, Vehicle Type PM-MS-53 ft, Distance 3,039 MI, and Stops 2. A 'Charges' section on the right lists Fixed/Distance/Time (3,799.11 USD), Stop (0.00 USD), Other Accessorial (60.00 USD), and a Total of 3,859.11 USD. Below this is the 'Trip Stops and Legs' section with a 'Stops' tab selected. It contains a table with columns: Facility, City, State, Arrival, Departure, and Stop Time. Two stops are listed: PM-Berlin\_P... (Berlin, VT) and DM Depot\_11... (San Diego, CA). The 'Arrival' and 'Departure' columns for the first stop are circled. At the bottom is the 'Deliveries' section with a table showing a delivery from Berlin, VT to San Diego, CA, with a 'Load' status.

Facility	City	State	Arrival	Departure	Stop Time
PM-Berlin_P...	Berlin	VT	03-MAR-2006 02:01 EST	03-MAR-2006 03:31 EST	1:30
DM Depot_11...	San Diego	CA	08-MAR-2006 00:46 PST	08-MAR-2006 01:50 PST	1:04

Origin City	Origin State	Destination Company	Destination City	Destination State	Load/Unload
Berlin	VT	DM Depot	San Diego	CA	Load

The Change Arrival/Departure window opens.

### Change Arrival/Departure Window

Change departure/arrival date and time. Optionally, calculate exceptions. Select OK to confirm.

Old Arrival Date, Time: 03-MAR-2006 02:01 EST  
 New Arrival Date, Time: 03-MAR-2006 02:01 EST

Old Departure Date, Time: 03-MAR-2006 03:31 EST  
 New Departure Date, Time: 03-MAR-2006 03:31 EST

Analyze

—Cost Impacts—

	Fixed/Distance/Time Charges	Stop Charges	Other Accessorial Charges	Total Charges
Before				
After				
Cost Change				

—Exceptions—

Exception

Cancel Change Times

Alternatively, you may also edit the times on the Stop Details window

- For a less-than-truckload or parcel trip, click the pencil icon beside the Departure field on the Origin and Destination tab. The Change Arrival/Departure Time window opens.

**Note:** For a less-than-truckload or parcel trip, you cannot directly modify the arrival time. You need to modify the departure time to get the desired impact on the arrival time.

- In the Change Arrival/Departure window:
  - For a truckload trip, enter a New Arrival and Departure date and time for the stop.
  - For a less-than-truckload or parcel trip, enter the New Departure Date and Time. The system automatically calculates the New Arrival Date and Time. Arrival Date and Time is calculated as the Departure Date and Time plus the Fixed Transit Time for the carrier's service in the trip's lane.
- To apply the change in departure and arrival date and times directly, click Change Times.
- To analyze cost and exceptions impact due to the change, click Analyze. This

initiates cost and exceptions calculations. The cost impact and exceptions appear in the Cost Impact and Exceptions regions in the Change Arrival/Departure window.

6. To reject the changes, click Cancel.
7. To execute the changes to the trip arrival and departure times, click Change Times.

---

## Key Performance Indicators

This chapter covers the following topics:

- Overview of Performance Management
- Key Performance Indicators in Oracle Transportation Planning
- Setting up Key Performance Indicators
- Viewing Key Performance Indicators
- Cost Allocation Methodology
- Direct Cost for a Delivery
- Cost without Consolidation and Savings

### Overview of Performance Management

Key performance indicators provide transportation planners with a means to judge the quality and effectiveness of a plan. This enables planners to correct problems in the plan and to continually improve plan quality. Key performance indicators help identify elements of the plan that need to be modified, corrected, or improved before releasing the plan for execution.

Also, transportation managers can perform what-if analysis for various scenarios and predict the impact of network and policy changes, such as adding or removing a consolidation facility, designating a preferred carrier, or using larger trailers. You can compare these different scenarios by evaluating the key performance indicators in plans that represent the different scenarios.

Oracle Transportation Planning enables you to run automated processes for trip building, continuous move building, and mode and carrier selection. You can also manually edit the output of these automated processes. A plan exists in some state after the application of any or all of these processes. You can generate the key performance indicators described in this chapter for a specific plan at any such stage, thus evaluating how the different steps are affecting the plan quality.

## Key Performance Indicators in Oracle Transportation Planning

This section describes the key performance indicators that Oracle Transportation Planning calculates for any plan.

In addition to the application of these key performance indicators to the entire plan, key performance indicators are available for specific elements of the plan, such as, modes, carriers, customers, suppliers, and facilities.

For key performance indicators that deal with costs and values, all data must be translated into a single currency. You need to specify a default currency while setting up your preferences. See 'Step 25: Set Up User Preferences, page 5-18 for more information.

Key performance indicators are persistent or updated automatically during the planning process if the profile option MST: Automatic KPI Recalculation is set to Yes. If the profile option is set to Yes, the system computes all key performance indicators after every change you make to the plan. If the MST: Automatic KPI Recalculation profile option is set to No, you must invoke the Re-Run KPIs function to re-calculate key performance indicator values after changes are made to the plan.

Note that you must close and re-open the appropriate plan output window to see the updated key performance indicator values. This applies to graphical and non-graphical key performance indicators.

For example, suppose that you have the Plan Summary window open. If you add a less-than-truckload trip to a truckload trip, this deletes the less-than-truckload trip. You need to re-open the Plan Summary window in order to see the new truckload and less-than-truckload counts and updated cost indicators.

The following table lists the key performance indicators and their calculation levels.

Serial No.	Key Performance Indicator
1	Total Orders
2	Total Weight
3	Total Volume
4	Total Pieces
5	Total Pallets
6	Total Truckloads



Serial No.	Key Performance Indicator
7	Total LTL Shipments
8	Total Parcel Shipments
9	Total Transportation (Plan) Cost
10	Total Truckload Cost
11	Total LTL Cost
12	Total Parcel Cost
13	Cost per Unit Weight
14	Cost per Unit Volume
15	Truckload Cost per Unit Distance
16	Truckload Cost per Unit Cube-Distance
17	Truckload Cost per Unit Weight-Distance

## Total Orders

The Total Orders performance indicator represents, at the plan level (Plan Summary window), the total number of delivery lines imported from the execution system and included in the plan. This is counted as the number of distinct delivery lines present in the input and not the number of source purchase, sales, or internal move order numbers. For example, if two different delivery lines share the same source purchase order or sales order, they are counted as two units for this measure, not one. If, however, multiple delivery lines with the same origin and destination are consolidated together into a delivery, they are still counted as separate orders for purposes of this measure. If order splitting is applied, the split lines are not counted separately for this indicator measure; only the original pre-split line is counted.

Note that, on other windows, such as Customer and Supplier Facilities Summary/Facility Details windows, the Total Orders key performance indicator represents the count of sales orders or purchase orders.

For example, consider the following input data:

Source Order	Line ID
OE: 55023	100
OE: 55024	200
OE: 55024	300
OE: 55024	400

On the Plan Summary window, you see Total Orders = 4 for the 4 unique delivery lines

On the Customer Facilities Summary/Facility Details window, you see Total Orders = 2 for the 2 unique orders OE:55023 and OE:55024

Note that with packaged delivery lines, the system calculates the Total Orders key performance indicator as illustrated in the following example:

Consider input data as follows:

Source Order	Line ID	Split from Line ID
OE:55023	100	--
OE:55024	200	--
OE:55024	300	200
OE:55024	400	200
OE:55025	500	--
OE:55025	600	--
WSH:	700	(intermediate package line including lines 500 and 600)
OE:55025	800	--
OE:55026	900	--
WSH:	1000	(intermediate package line including lines 800 and 900)

Source Order	Line ID	Split from Line ID
WSH:	1100	(Package line including lines 700 and 1000)

In this case, the Total Orders key performance indicator in the Plan Summary has a value of 3. The three distinct delivery lines considered in this count are 100, 200, and 1100.

The Total Orders key performance indicator is calculated at the levels of plan, customer, supplier, and facility.

## Total Weight

Total Weight represents the summed weight for all delivery lines in the plan in your desired weight unit of measure. Note that the weight of a shipment that traverses a multi-leg or multi-carrier itinerary is only counted once for the purpose of this measure.

Delivery lines input from the transportation execution system contain two weight fields. The planning system determines all weights for planning from these two fields. The two fields are Net Weight and Gross Weight.

- Net weight is the weight of the products being shipped.
- Gross weight is the weight of the products plus the weight of any packaging used for shipping. The difference between gross and net weight is called tare weight.

The type of Total Weight key performance indicator, Total Gross Weight or Total Net Weight, that the system displays varies among plan output windows. All plan output windows in Oracle Transportation Planning that display the Total Weight key performance indicator value indicate if the value is a Net Weight or a Gross Weight.

For example, the Carrier Details window uses Gross Weight while the Order Details window uses Net weight.

In the Plan Summary window, the rows for the various modes show gross weight, but the plan total shows net weight.

The planning system calculates the Total Weight performance indicator at the following levels: plan, mode, carrier, customer, supplier, facility.

## Total Volume

The Total Volume performance indicator represents the summed cubic volume of all delivery lines in the plan, in the specified unit of measure. Note that the system counts the volume of a shipment that traverses a multi-leg or multi-carrier itinerary exactly once for the purpose of this measure.

The system calculates the Total Volume performance indicator at the levels of plan, mode, carrier, customer, supplier, and facility.

## **Total Pieces**

Total Pieces represents the total number of packages across all delivery lines included in a plan.

The system calculates this key performance indicator at the levels of plan, mode, carrier, customer, supplier, and facility.

## **Total Pallets**

Total Pallets represents the total number of pallets across all delivery lines included in the plan. This includes both pallets pre-built in the input to the plan and, if the plan is set to use palletization, the additional estimated number of pallets.

The system calculates the Total Pallets performance indicator at the levels of plan, mode, carrier, customer, supplier, facility.

## **Total Truckloads**

Total Truckloads represents the total number of truckloads included in the plan. This includes direct truckloads, multi-stop truckloads, and truckloads moving to or from pool points. It does not include empty deadhead movements that are constructed for the purpose of continuous moves. As the truckload mode is generally considered the most cost-efficient trucking mode, the breakdown of activity by mode helps to evaluate the quality and effectiveness of the planning process.

The system calculates the Total Truckloads performance indicator at the levels of plan, carrier, customer, supplier, and facility.

## **Total Less-than-Truckload Shipments**

Total Less-than-Truckload Shipments represents the total number of less-than-truckload trips in the plan. A less-than-truckload trip that includes multiple delivery lines only counts as one unit for the purpose of this measure. Again, the breakdown of activity by mode helps to evaluate the quality and effectiveness of the planning process.

The system calculates the Total Less-than-Truckload Shipments performance indicator at the levels of plan, carrier, customer, supplier, and facility.

## **Total Parcel Shipments**

Total Parcel Shipments represents the total number of parcel trips in the plan. A parcel trip that includes multiple orders only count as one shipment for the purpose of this measure. The breakdown of activity by mode helps to evaluate the quality and

effectiveness of the planning process.

The system calculates the Total Parcel Shipments performance indicator at the levels of plan, carrier, customer, supplier, and facility.

## **Total Transportation (Plan) Cost**

Total Transportation Cost represents the sum of all transportation costs you chose to include in the plan run, including truckload, less-than-truckload, and parcel base costs and accessorial charges. Handling costs at facilities are not included in this measure.

The Total Transportation Cost can be calculated at the levels of plan, mode, carrier, customer, supplier, and facility.

Note that calculating the total transportation cost by customer, supplier, or facility requires a cost allocation methodology (see 'Cost Allocation Methodology, page 13-13 for more information).

## **Total Truckload Cost**

Total Truckload Cost represents the sum of all costs for truckload transportation, including distance-based, weight-based, minimum, and stop charges. Accessorial charges including loading or unloading costs and other surcharges are included in this measure if you selected these charges to be considered in the planning process. The breakdown of costs by mode in the transportation plan helps you to determine how cost-efficient your transportation operations are and where price negotiations or other cost-reducing efforts may be most worthwhile.

The system calculates the Total Truckload Cost performance indicator at the levels of plan, carrier, customer, supplier, facility.

Calculating the Total Truckload Cost by customer, supplier, or facility requires a cost allocation methodology as described in 'Cost Allocation Methodology, page 13-13.

## **Total LTL Cost**

Total LTL Cost represents the sum of all costs for less-than-truckload transportation. Discounts and accessorial charges are included in this measure if you chose to consider them in the planning process. The breakdown of costs by mode in the transportation plan helps you to determine how cost-efficient transportation operations are and where price negotiations or other cost-reducing efforts may be most worthwhile.

The system calculates this key performance indicator at the levels of plan, carrier, customer, supplier, and facility.

## **Total Parcel Cost**

Total Parcel Cost represents the sum of all costs for parcel transportation. Discounts and accessorial charges are included in this measure if you selected these charges for

consideration in the planning process. The breakdown of costs by mode in the transportation plan helps you to determine how cost-efficient your transportation operations are and where price negotiations or other cost-reducing efforts may be most worthwhile.

The system calculates the Total Parcel Cost at the levels of plan, carrier, customer, supplier, and facility.

## **Cost per Unit Weight**

Cost per unit Weight is equal to the Total Cost divided by the Total Weight. This is a normalized measure of how efficient your company's transportation methods are. For example, a plan with cost per unit weight of \$0.2 per lb is more efficient than one with a cost per unit weight of \$0.3 per lb.

The system calculates the Cost per Unit Weight performance indicator at the levels of plan, mode, carrier, customer, supplier, and facility.

## **Cost per Unit Volume**

Cost per Unit Volume is equal to the Total Cost divided by the total cubic volume. This value is a normalized measure of how efficient your company's transportation methods are. For example, a plan with cost per unit volume of \$0.4 per ft<sup>3</sup> is more efficient than one with a cost per unit weight of \$0.5 per ft<sup>3</sup>.

The system calculates the Cost per Unit Volume performance indicator at the levels of plan, mode, carrier, customer, supplier, and facility.

## **Truckload Cost per Unit Distance**

Truckload Cost per Unit Distance is equal to the Total Truckload Cost divided by the Total Truckload Distance. This is a measure of truckload pricing that indicates whether a company has negotiated good truckload rates and whether it has utilized the right truckload carriers in the right lanes.

The system calculates the Truckload Cost per Unit Distance performance indicator at the levels of plan and carrier.

## **Truckload Cost per Unit Cube-Distance**

Truckload Cost per Unit Cube-Distance is equal to the Total Truckload Cost divided by the truckload cube-distance. This is an allocated measure of cost-efficiency. Cube distance is calculated by summing, over all shipments sent by truckload, the product of cubic volume and either (a) actual distance traveled or (b) direct route distance. The distance used (a or b) in the calculation is the one you specified in the Global Shipping Parameters window. See 'Global Cost Allocation Parameters, page 4-18 for more information. In addition to cost allocation, this distance specification applies to calculation of Truckload Cost per Unit Cube-Distance and other key performance

indicators. As an example of calculating total cube distance using method (a) actual distance traveled, suppose that a multi-stop truckload leaves city A for, sequentially, cities B, C, and D. The road distance of each leg is:

- A-B: 50 miles (cumulatively 50 miles)
- B-C: 75 miles (cumulatively 125 miles)
- C-D: 25 miles (cumulatively 150 miles)

Suppose also that the truckload carries the following shipments to B, C, and D.

- A-B: 30 cubic feet
- A-C: 50 cubic feet
- A-D: 10 cubic feet

If this is the case, the total cube-distance based on actual distance traveled for the delivery lines constituting the truckload is:

$$(30 \times 50) + (50 \times 125) + (10 \times 150) = 9250 \text{ cube-foot-miles.}$$

To compute the total cube-distance for use in this key performance indicator, you must sum this calculation over all of the truckloads in the plan.

In the same example, assume that the distances to carry the shipments, individually and directly (without any other stops) from their origins to their destinations, are:

- A-B: 50 miles
- A-C: 75 miles
- A-D: 115 miles

Then the total cube-distance using method (b), direct route distance, is:

$$(30 \times 50) + (50 \times 75) + (10 \times 115) = 6400 \text{ cube-miles.}$$

To compute the total cube-distance for use in this key performance indicator, you must sum this calculation over all of the truckloads in the plan.

The system calculates this key performance indicator at the levels of plan, carrier, customer, supplier, and facility.

## Truckload Cost per Unit Weight-Distance

Truckload Cost per Unit Weight Distance is equal to the Total Truckload Cost divided by the truckload weight distance. This value is an allocated measure of cost-efficiency. The calculation of weight distance is exactly analogous to the calculation of cube distance for the Truckload Cost per Unit Cube-Distance performance indicator, except for the substitution of weight for cubic volume. The same choice of distance calculation

method (actual distance traveled or direct route distance) applies for this key performance indicator as for the Truckload Cost per Unit Cube-Distance performance indicator.

As an example of calculating total weight distance using method (a) actual distance traveled, suppose that a multi-stop truckload leaves city A for, sequentially, cities B, C, and D. The road distance of each leg is:

- A-B: 50 miles (cumulatively 50 miles)
- B-C: 75 miles (cumulatively 125 miles)
- C-D: 25 miles (cumulatively 150 miles)

Suppose also that the truckload carries the following shipments to, respectively, B, C, and D.

- A-B: 100 lbs
- A-C: 150 lbs
- A-D: 50 lbs

If this is the case, the total weight-distance based on actual distance traveled for delivery lines constituting the truckload is:

$$(100 \times 50) + (150 \times 125) + (50 \times 150) = 31250 \text{ pound-miles.}$$

To compute the total weight-distance for use in this key performance indicator, you must sum this calculation over all of the truckloads in the plan.

In the same example, assume that the distances to carry the shipments, individually and directly (without any other stops) from their origins to their destinations, are:

- A-B: 50 miles
- A-C: 75 miles
- A-D: 115 miles

Then the total weight-distance using method (b), direct route distance, is

$$(100 \times 50) + (150 \times 75) + (50 \times 115) = 22000 \text{ pound-miles.}$$

To compute the total weight-distance for use in this key performance indicator, you must sum this calculation over all of the truckloads in the plan.

The system calculates this key performance indicator at the levels of plan, carrier, customer, supplier, and facility.



## Setting up Key Performance Indicators

You set up global preferences for key performance indicators using the Global Preferences window in Oracle Transportation Planning. Individual users may set up their own preferences for key performance indicators using the User Preferences window.

See 'Global Preferences Setup for Key Performance Indicators, page 5-11 and 'User Preferences Setup for Key Performance Indicators, page 5-18 for more information.

## Viewing Key Performance Indicators

### Non-Graphic Key Performance Indicators

You can view the following key performance indicators on the Plan Summary window. You can access the Plan Summary window by selecting the Plan node on the navigation tree and then right-clicking the node and selecting Plan Summary.

- Total Orders
- Total Weight
- Total Volume
- Total Pieces
- Total Pallets
- Total Truckloads
- Total Less-than-Truckload Shipments
- Total Parcel Shipments
- Total Plan Cost
- Total Truckload Cost
- Total Less-than-Truckload Cost
- Total Parcel Cost

### Plan Summary Window

Plan Summary (RP-MU-10B)

Plan: **RP-MU-10B** | **manl updt scnro 10 v2**

Cost			Dates	
Total Plan Cost	10,852.89	USD	Plan Start Date	06-FEB-2006 06:00
Without Consolidation	12,677.48	USD	Plan End Date	09-FEB-2006 05:59
Savings	1,824.59	USD	Last Run	06-JAN-2006 00:00

TLs in Continuous Moves: **0** %

—Plan Output—

	Count	Cost	Weight (...	Cube	Pallets	Pieces	Orders
<b>Total Trips</b>	13	10,852.89	203,337	24,478	0	17,185	15
TLs	8	5,100.84	182,682	20,918	0	14,955	10
LTLs	5	5,752.05	20,655	3,561	0	2,230	5
Parcels	0	0.00	0	0	0	0	0
Continuous Moves	0	0.00	0	0	0	0	0
Unassigned Deliveries	0	0.00	0	0	0	0	0

[Details](#)

### Graphic Key Performance Indicators

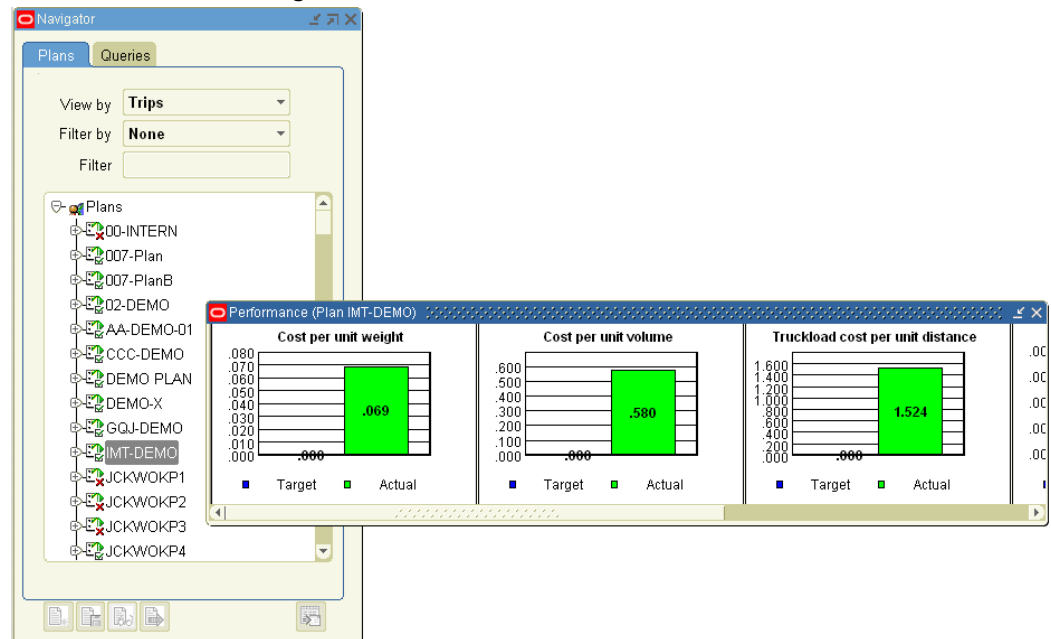
Of the seventeen key performance indicators listed in 'Key Performance Indicators , page 13-2, you can view the following five key performance indicators graphically:

1. Cost per Unit Weight
2. Cost per Unit volume
3. Truckload Cost per Unit Distance
4. Truckload Cost per Unit Weight-Distance
5. Truckload Cost per Unit Cube-Distance

To view these key performance indicators, select the Performance option, which is available when you right-click various tree nodes on the Planner Workbench. Note that the Performance option is available only at nodes that represent a level at which these performance indicators are calculated. See 'Key Performance Indicators , page 13-2 for calculation levels for each key performance indicator.

You may also refer to 'Menu Options Available by Right-Clicking Tree Nodes, page 11-72 for nodes at which the Performance option is available.

### Planner Workbench Navigator and Performance Window



**Note:** If the profile option MST: Automatic KPI Recalculation is set to Yes, the system recalculates all key performance indicators after every change you make to the plan. However, you must close and re-open the appropriate plan output window to see the updated key performance indicator values. This applies to graphical as well as non-graphical key performance indicators.

If the profile option is set to No, you must invoke the Re-Run KPIs function to obtain key performance indicator values after changes are made to the plan.

## Cost Allocation Methodology

The following sections describe the methods in which costs are allocated for calculation of key performance indicators:

- 'Cost Allocation Parameters, page 13-14
- 'Allocating Truckload Costs to Deliveries, page 13-14
- 'Allocating Truckload Costs to Delivery LinesOracle Transportation Planning Implementation and User's Guide, page 13-16
- Allocating Continuous Move Costs to Truckloads, page 13-18

- 'Allocating Less-than-Truckload and Parcel Costs to Deliveries and Delivery , page 13-20Lines
- 'Calculating Total Costs for Deliveries, page 13-21
- 'Calculating Total Costs for Delivery Lines, page 13-22
- 'Calculating Total Costs for Orders, page 13-22

## Cost Allocation Parameters

Cost allocation for truckload moves require you to make the following selections in your stored preferences.

See 'Global Cost Allocation Parameters, page 4-18 and 'Cost Allocation Parameters, page 5-23 for more information.

- Principal Cost Allocation Basis: cube or weight
- Distance Allocation Method: actual distance traveled or direct route distance
- Truckload Stop Cost Allocation Method: delivery stops or pick-up stops

## Allocating Truckload Costs to Deliveries

The steps involved in allocating the costs of a truckload, whether multi-stop or direct truckload, to the deliveries on that trip are as follows.

1. All loading, unloading, and handling costs, including both carrier and facility charges, which are accumulated on a piece, pallet, unit weight, or unit cube basis are assigned to deliveries loaded and unloaded on the basis of the actual pieces, pallets, weight, or cube of the deliveries.
2. Sum all stop charges and divide them evenly over all pickup or delivery stops as indicated in the preferences:

Stop charges may not accrue evenly across stops. The first and last stops are generally included in the base rate for a move. Additional stops typically accrue additional charges. These charges often increase with each subsequent stop. For example, the first, second, third, and any further additional stops may cost, respectively, \$50, \$60, \$70, and \$75. The system sums up all of these charges and then divides the charges equally over all the stops of the category you have chosen (pickup stops or delivery stops). For instance, if a trip with one pick-up stop and four drop-off stops incurs charges of \$0, \$50, \$60, and \$70 for the four drop-off stops and you have chosen to allocate costs over delivery stops, then each delivery stop is assigned  $(\$180/4) = \$45$  worth of stop charges.

If you run pure outbound operations, you will typically choose to allocate over

delivery stops; if you run pure inbound operations, you will typically choose to allocate over pick-up stops. A stop where both pick-up and delivery activity occurs is included among the allocated stops regardless of which type of activity you choose.

3. Allocate all stop charges assigned to a stop to deliveries using that stop based on their weight or cubic volume as indicated in the preferences. The system also allocates all fixed or other non-weight-based, non-cube-based, non-pieces-based loading, unloading, and handling charges at the stop to the deliveries using that stop. The system also allocates origin and destination surcharges triggered by the stop to the deliveries using that stop.

The total costs to be assigned to a stop include:

1. stop charges allocated in step (2)
2. any loading, unloading, or handling costs incurred at that stop which could not be allocated to orders in step (1)
3. any origin or destination surcharges incurred by the stop

Costs (b) may include fixed per-delivery unloading charges or per-hour charges. These charges are allocated to the deliveries unloaded or loaded according to the weight or the cube of the deliveries. This is determined by the Principal Cost Allocation Basis: Weight or Cube.

The planning engine allocates stop charges over deliveries unloaded at a stop if you chose delivery stops as the allocation basis and on deliveries loaded there if you chose pickup stops as the allocation basis. The system allocates loading or unloading charges at a stop over deliveries loaded or unloaded, respectively, at the stop, regardless of which allocation basis you chose.

For example, consider a stop where three deliveries, weighing 100, 250, and 300 pounds, are unloaded and two deliveries, weighing 400 and 500 pounds, are loaded.

If you choose delivery stops and weight basis, then the system allocates the following to the 100 lb. delivery:

$100 / (100 + 250 + 300) = 15\%$  of the stop charges allocated to the stop.

The system also allocates this same percentage of any unloading costs not previously allocated to the delivery.

The system allocates the following to the 400 lb. delivery:

$400 / (400 + 500) = 44\%$  of any loading costs not previously allocated, but none of the stop charges.

Similarly, the planning engine allocates origin surcharges over deliveries loaded at a stop and destination surcharges over deliveries unloaded at the stop.

4. Divide all remaining costs over deliveries on the trip according to weight-distance or cube-distance. Remaining costs means the total costs minus loading charges, unloading charges, handling charges, stop charges, and origin and destination surcharges.

These remaining charges, not yet allocated in steps 1 through 3, consist primarily of the line haul charges, be they fixed, minimum, or per-mile. The system allocates these costs to individual deliveries on the basis of weight-distance or cube-distance, depending on whether you chose weight or cube as the principal allocation basis. The distance used in this allocation is either actual distance traveled or direct route distance, depending on the Distance Allocation Method you specified.

For example, suppose that a multi-stop truckload traverses the route A-B-C-D with the following distances:

- A-B: 50 miles (cumulatively 50)
- B-C: 75 miles (cumulatively 125)
- C-D: 25 miles (cumulatively 150)

The truckload carries three deliveries:

- A-B: 100 pounds, 30 cubic feet, 50 route miles, direct 50 miles
- A-C: 150 pounds, 50 cubic feet, 125 route miles, direct 75 miles
- A-D: 50 pounds, 10 cubic feet, 150 route miles, direct 115 miles

Using cube-distance allocation, each delivery's proportion of the total cost equals the product of its cubic volume with either the distance it actually travels or its direct route distance as indicated by the preferences, divided by the sum of all such products.

Using actual distance traveled, the following is Shipment A's allocation:

$$(30 \times 50) / [(30 \times 50) + (50 \times 125) + (10 \times 150)] = 16\%$$

Using direct route distance, the following is Shipment A's allocation:

$$(30 \times 50) / [(30 \times 50) + (50 \times 75) + (10 \times 115)] = 23\%$$

The calculations on a weight-distance basis follow the same method but substituting the deliveries' weights for their cubic volumes.

## Allocating Truckload Costs to Delivery Lines

After allocating the costs of a truckload to the deliveries it carries, the system allocates the cost of each delivery down to its constituent delivery lines on a simple gross weight or cube basis. Whether to use the weight or cube basis is determined by the measure you specify as the Principal Cost Allocation Basis.

As an example, suppose that a delivery is allocated \$125 of the cost of a truckload that it traveled on. The delivery includes three delivery lines:

A: 75 lbs, 15 cubic ft.

B: 125 lbs, 20 cubic ft.

C: 160 lbs, 30 cubic ft.

If the Principal Cost Allocation Basis is weight, cost allocation for delivery line A is:

$$75 / (75 + 125 + 160) = 21\% (\$26)$$

If the principal cost allocation basis is cube, cost allocation for A is as follows:

$$15 / (15 + 20 + 30) = 23\% (\$29).$$

In some cases, delivery lines are nested inside of each other, such as when delivery lines are cartonized or palletized into a package line. In these cases, proper cost allocation requires an iterative allocation over successive layers of lines. Allocations among packages consider the tare weight of those packages. Allocations among delivery lines within a package, however, does not consider the tare weight of that package although it does consider the tare weight of smaller packages nested within it. The following example illustrates this iterative allocation of truckload cost to delivery lines.

Suppose that empty containers have dimensions as follows.

Container	Empty Weight	Nominal Loaded Volume
small carton	1 lb	6 cu ft
large carton	2 lbs	11 cu ft
pallet	25 lbs	1000 cu ft

Consider three types of order-based (non-container) delivery lines:

- X: net weight = gross weight = 2 lbs, volume = 1 ft<sup>3</sup>
- Y: net weight = gross weight = 3 lbs, volume = 3 ft<sup>3</sup>
- Z: net weight = gross weight = 5 lbs, volume = 4 ft<sup>3</sup>

Each small carton contains one each of X and Y type delivery lines. Thus, the delivery lines representing packed small cartons each have a net weight of 5 lbs (2 + 3) and a gross weight of 6 lbs (net weight 5 lbs. + weight of carton 1 lb.) and a volume of 6 ft<sup>3</sup>.

Each large carton contains one each of X, Y, and Z type delivery lines. Thus, the delivery lines representing packed large cartons each have a net weight of 10 lbs (2 + 3 + 5) and a gross weight of 12 lbs (net weight 10 lbs + weight of carton 2 lbs.) and a volume of 11 ft<sup>3</sup>.

Each pallet carries 40 large and 60 small cartons. Thus, each delivery line representing a packed pallet has a net weight of 700 lbs, a gross weight of 865 lbs, and a volume of 1000 ft<sup>3</sup>.

Net Weight = 40 large cartons \* net weight of 10 lbs per carton + 60 small cartons \* net weight 5

Gross Weight = 25 lbs pallet weight + 40 large cartons \* gross weight of 12 lbs per carton + 60 small \* 6 lbs

Suppose that a delivery with an allocated cost of \$1000 consists of 50 of these pallets, each constituting its own delivery line. Because the pallets all have equal weight and cube, the cost of the delivery divides equally among them as \$20 each, regardless of whether allocation is based on weight or on volume.

The \$20 cost for each pallet divides among the cartons on board as follows. If the allocation is based on weight, each large carton gets  $(12/840) = 1.4\% = \$0.29$ , while each small carton gets  $(6/840) = 0.71\% = \$0.14$ .

Note that the 865 lbs worth of allocation to the pallet is re-allocated over only 840 lbs of cartons. The 25 lbs of empty weight of the pallet does not retain any of the allocation, as it is not part of the product being shipped. Similarly, if the allocation is based on volume, each large carton gets  $11/800 * 20 = \$0.275$  and each small one  $6/800 * 20 = \$0.15$ . The 1000 ft<sup>3</sup> worth of allocation to the pallet is reallocated over the 800 ft<sup>3</sup> of cartons.

Following the example further, the allocations to delivery lines within the cartons are as listed in the following table.

Delivery Line in Carton	Weight-Based Allocation	Cube-Based Allocation
X in small carton	$2/5 * \$0.14 = \$0.056$	$1/4 * \$0.15 = \$0.038$
Y in small carton	$3/5 * \$0.14 = \$0.084$	$3/4 * \$0.15 = \$0.113$
X in large carton	$2/10 * \$0.29 = \$0.058$	$1/8 * \$0.275 = \$0.034$
Y in large carton	$3/10 * \$0.29 = \$0.087$	$3/8 * \$0.275 = \$0.103$
Z in large carton	$5/10 * \$0.29 = \$0.145$	$4/8 * \$0.275 = \$0.134$

## Allocating Continuous Move Costs to Truckloads

A continuous move consists of a sequence of trips with intervening empty moves (deadheads). Empty moves are present only if they are necessary to connect loaded trips in a continuous move. Carriers offer discounts below the regular costs of the trips for grouping them as continuous moves.

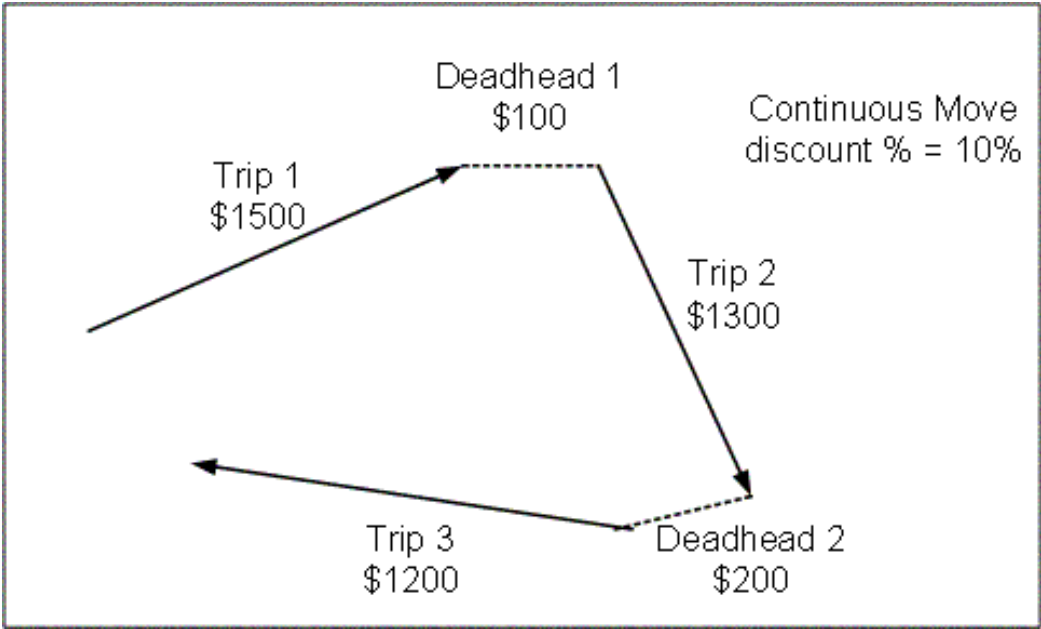
Consider the following example of a continuous move with three connected trips and



two deadhead moves, where the carrier has specified a continuous move discount percent. The discount is applicable to the first trip as well and no free empty deadhead miles are allowed. The total cost of the continuous move must be distributed across the various loaded legs.

'Example Showing Cost Allocation to Trips in Continuous Moves, page 13-19 shows the continuous move with three connected trips, Trip1, Trip 2, and Trip 3 and two deadhead moves Deadhead1 and Deadhead 2. The table following the figure indicates the original costs of the loaded trips before inclusion in the continuous move and the discount available with inclusion in the continuous move. The table also indicates the costs allocated to the individual loaded trips in the continuous move.

**Example Showing Cost Allocation to Trips in Continuous Moves**



The following table discusses the cost allocation to trips in continuous moves.

--	Trip 1	Deadhead 1	Trip 2	Deadhead 2	Trip 3	Total
Original Cost	1500	(none but would be 100)	1300	(none but would be 200)	1200	4000
Discount %	10%	10%	10%	10%	10%	--

--	Trip 1	Deadhead 1	Trip 2	Deadhead 2	Trip 3	Total
Discounted Cost	1500 * (1-10%) = 1350	100 * (1-10%) = 90	1300 * (1-10%) = 1170	200 * (1-10%) = 180	1200 * (1-10%) = 1080	3870
Effective Discount	3.25%	--	3.25%	--	3.25%	--
Allocated Cost	1500 * (1-3.25%) = 1451	--	1300 * (1-3.25%) = 1258	--	1200 * (1-3.25%) = 1161	3870

Effective discount =  $1 - (3870/4000) = 3.25\%$

To allocate costs of continuous moves back to the deliveries on the various trips making up the continuous moves, the system first allocates the costs back to the trips. This means that, in addition to reflection of discounts, the cost of any deadhead legs is shared among the loaded legs. To do this, the system applies the effective discount to all elements of the costs of the loaded movements. The effective discount is the net total cost of the continuous move divided by the total costs of the constituent trips if they were not part of a continuous move.

In this example, the effective discount is 3.25%, not the carrier-applied discount of 10%, which ignores the cost of the deadhead leg. The effective discount of 3.25% is applied equally to all the elements of the costs of trips 1, 2, and 3. These cost elements are then allocated to the deliveries on the trips. Note that the system allocates no costs back to the deadhead leg. It carries no orders by itself and exists only to enable the discounting of the other cargo-bearing trips.

## Allocating Less-than-Truckload and Parcel Costs to Deliveries and Delivery Lines

As a result of simple consolidation, a less-than-truckload or parcel movement may contain multiple delivery lines or even multiple deliveries. In any case, the system performs the cost allocation for less-than-truckload and parcel moves over their constituent delivery lines on a simple weight basis. Due to the simplicity of this method, no difference exists between the following:

1. Applying this method to allocate the cost first to deliveries
2. Applying this method to allocate costs directly down to delivery lines

As an example, consider a less-than-truckload shipment consisting of three deliveries or delivery lines: A, B, and C. The cost of this full less-than-truckload shipment is \$300. The weights of the constituent elements are:

- A: 75 lbs
- B: 125 lbs
- C: 160 lbs

A's allocation is  $75/(75 + 125 + 160) = 21\%$  (\$63).

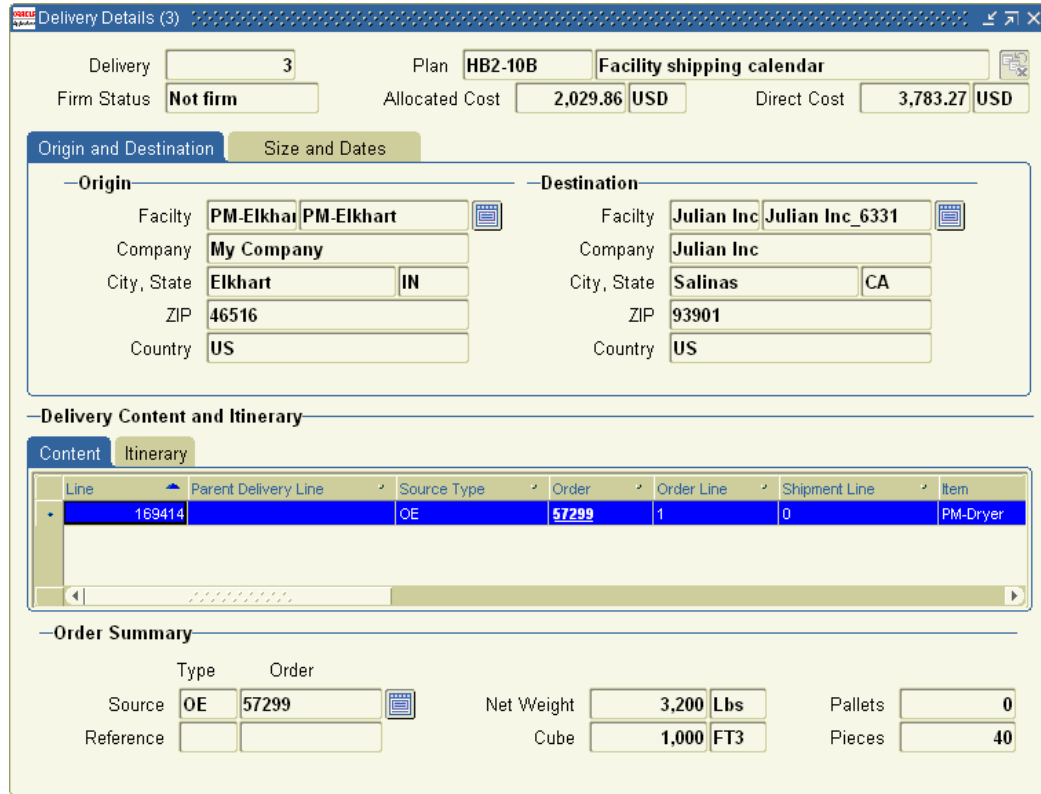
## Calculating Total Costs for Deliveries

The total cost allocated to a delivery consists of the sum of its allocations of the costs of all trips that it travels on, plus any handling charges at facilities that the delivery flows through. Because the system assesses handling costs on the basis of weight, cube, or pieces, the handling charges are determined by delivery.


As an example, consider a delivery weighing 300 lbs that travels from origin A to pool point B by less-than-truckload and from B to destination C by truckload. Pool point B assesses a handling charge of \$1.50/lb. The total costs for the delivery are its share of the less-than-truckload move from A to B plus its share of the truckload move from B to C plus the handling charges of \$450.

You can view the total cost allocated to a delivery on the Delivery Details window, which is accessible from the Planner Workbench.

### Delivery Details Window




Delivery Details (3)

Delivery  Plan  Facility shipping calendar 

Firm Status  Allocated Cost  USD Direct Cost  USD

Origin and Destination Size and Dates

Origin

Facility   


Company

City, State

ZIP

Country

Destination

Facility   

Company

City, State

ZIP

Country


Delivery Content and Itinerary

Content Itinerary

Line	Parent Delivery Line	Source Type	Order	Order Line	Shipment Line	Item
169414		OE	57299	1	0	PM-Dryer

Order Summary

Type Order

Source   

Reference

Net Weight  Lbs Pallets

Cube  FT3 Pieces

## Calculating Total Costs for Delivery Lines

The total cost allocated to a delivery line consists of the sum of its allocations of the costs of all trips (truckload, less-than-truckload, or parcel) that it travels on, plus any handling charges at facilities that the delivery line flows through. Because the handling costs are assessed on the basis of weight, cube, or pieces, the handling charges are determined by delivery line.

## Calculating Total Costs for Orders

The total cost allocated to an order consists of the sum of all costs allocated to the delivery lines that make up the order.

## Direct Cost for a Delivery

To illustrate the cost savings impact of optimization, Oracle Transportation Planning calculates the direct cost for each delivery.

The system determines the direct cost of a delivery by selecting the least cost carrier that services the lane defined by the delivery's origin and destination. The delivery's direct

cost also includes facility changes such as loading, unloading, or handling. You can compare a delivery's direct and allocated plan costs to measure the cost savings from optimization.

You can view the Allocated Cost and the Direct Cost of a delivery on the Delivery Details window. You can access the Delivery Details window by choosing the Delivery Details button on a Trip Details or Order Details window. You can also access the Delivery Details window by right-clicking a Delivery tree node on the Planner Workbench and then selecting Delivery Details.

### Delivery Details Window: Allocated Cost and Direct Cost

The screenshot shows the 'Delivery Details (87)' window. At the top, it displays 'Delivery 87', 'Firm Status Not firm', 'Plan DG-IT-4C', and 'Pooling & multi-stop (integrated)'. Below this, 'Allocated Cost 592.41 USD' and 'Direct Cost 1,558.38 USD' are shown. The 'Origin and Destination' section is divided into two tabs: 'Origin' and 'Destination'. The 'Origin' tab shows details for 'PM-Knoxville\_PM-I' (My Company, Knoxville, TN, 37912, US). The 'Destination' tab shows details for 'Joe Inc\_6: Joe Inc\_6327' (Joe Inc, Sacramento, CA, 95814, US). Below this is the 'Delivery Content and Itinerary' section with a table showing a single line item. At the bottom is the 'Order Summary' section with fields for Source, Type, Order, Net Weight, Cube, Pallets, and Pieces.

Line	Parent Delivery Line	Source Type	Order	Order Line	Shipment Line	Item
99882		OE	56732	1	0	DG-Green T

Type		Order	Net Weight		Pallets
Source	OE	56732	4,375	Lbs	0
Reference			350	FT3	175

## Cost without Consolidation and Savings

The Cost without Consolidation value presented on the Plan Summary window for a plan represents the plan cost if:

- Simple consolidation is the optimization strategy used in planning
- The only constraints considered are:
  - Maximum total distance

- Maximum total time
- Facility calendars
- Vehicle capacity
- Ship and delivery time windows

Savings is the difference between the Total Cost and the Cost without Consolidation for a given plan. The Savings value provides a benchmark to measure the impact of advanced optimization strategies that include pooling and cross-docking, multi-stop truckloads, and continuous moves.

You can view the Total Plan Cost, the Cost without Consolidation, and Savings for a plan on the Plan Summary screen.

#### Plan Summary Window: Plan Costs

Plan Summary (DG-IT-4C)

Plan **DG-IT-4C** **Pooling & multi-stop (integrated)**

**Cost**

Total Plan Cost	4,045.25	USD
Without Consolidation	8,226.51	USD
Savings	4,181.26	USD

**Dates**

Plan Start Date	10-NOV-2006	00:00
Plan End Date	10-NOV-2006	23:59
Last Run	06-JAN-2006	00:00

Percent of TLs in Continuous Moves  %

**Plan Output**

	Count	Cost	Weight (...)	Cube	Pallets	Pieces	Orders
<b>Total Trips</b>	4	4,045.25	32,500	2,600	0	1,300	6
<b>TLs</b>	1	1,932.75	32,500	2,600	0	1,300	6
<b>LTLs</b>	3	2,112.50	32,500	2,600	0	1,300	6
<b>Parcels</b>	0	0.00	0	0	0	0	0
<b>Continuous Moves</b>	0	0.00	0	0	0	0	0
<b>Unassigned Deliveries</b>	0	0.00	0	0	0	0	0

Details

---

## Reports in Oracle Transportation Planning

This chapter covers the following topics:

- Overview of Reports
- Profile Options for Reports
- Master Summary Report
- Master or Carrier Trip and Shipment Detail Report
- Master Order Detail Report
- Facility Trip and Shipment Detail Report
- Pool and Skip Point Activity Detail Report
- Shuttle Trip Activity Detail Report

### Overview of Reports

Oracle Transportation Planning provides six types of reports:

- Master Summary
- Master or Carrier Trip and Shipment Detail
- Master Order Detail
- Facility Trip and Shipment Detail
- Pool and Skip Point Activity Detail
- Shuttle Trip Activity Detail

You can access these reports from the Transportation Planner Navigator. The reports are described in detail in this chapter.

All reports in Oracle Transportation Planning are viewable on-screen and are formatted

for printing. All reports include the basic plan information including plan name, plan run date and time, and plan time horizon.

The reports express all monetary amounts in the default currency specified in your user preferences. See 'Step 25: Set Up User Preferences, page 5-18 for more information.

You may produce reports for the entire plan or for various drill-down entities.

## Profile Options for Reports

The following profile options are used to populate appropriate information on Oracle Transportation Planning reports.

- MST: Operator Company Name
- MST: Contact Email Address
- MST: Contact Name
- MST: Contact Phone Number
- MST: Department Name

For more information, see 'Step 23: Set Up Profile Options, page 5-2.

## Master Summary Report

Transportation planners can use this report to review the general trends in their planning problems and solutions. In addition to running this report for the enterprise as a whole, you have the option to run these statistics and key performance indicators for a specific facility, carrier, customer, or supplier.

Note that certain data displayed in this report requires allocation of multi-stop truckload costs to deliveries within trips and allocation of consolidated direct shipment costs to constituent deliveries. See 'Cost Allocation Methodology, page 13-13 for more information.

Every Master Summary Report contains the following header information.

- Report Name
- Plan Name
- Plan Run Date and Time
- Plan Period
- Report for (Entire Plan, Facility, Customer, or Supplier)

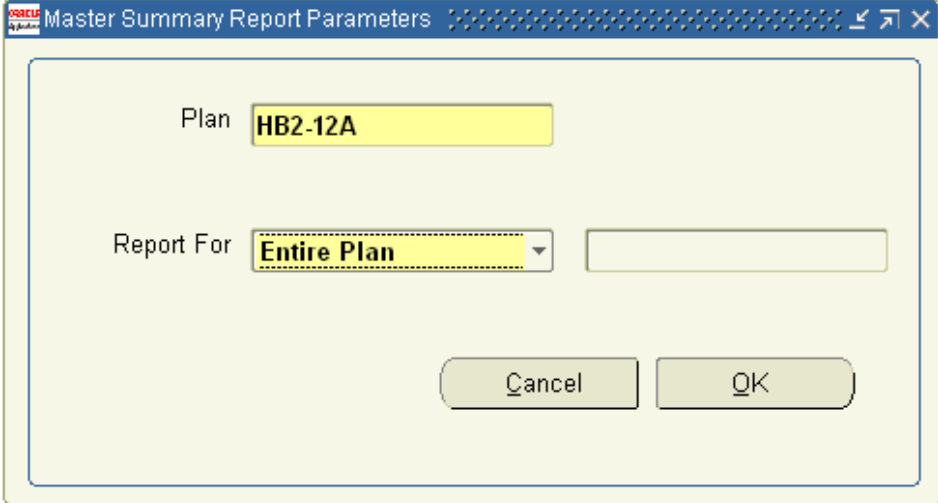


## Generating the Master Summary Report

To generate the Master Summary Report:

1. From the Reports menu in the Transportation Planner Navigator, select Master Summary. This opens the Master Summary Report Parameters window.
2. On the Master Summary Report Parameters window, select the Plan name from the list of values.
3. In the Report For field, select a value from the list of values. You can generate the report for the whole enterprise, or for a specific shipper facility, customer, or supplier.
  - If you select Entire Plan in the Report For field, the system generates the report for the entire enterprise. In this case the value field beside the Report for field is disabled.

**Master Summary Report Parameters Window**



The screenshot shows a window titled "Master Summary Report Parameters". It contains two main input fields. The first is labeled "Plan" and has a text box with the value "HB2-12A". The second is labeled "Report For" and has a dropdown menu currently showing "Entire Plan". To the right of the dropdown is an empty text box. At the bottom right of the window are two buttons: "Cancel" and "OK".

- If you select Facility, Customer, or Supplier in the Report for field, the value field beside this field is enabled and shows a list of shipper facilities, customer names, or supplier names that you can select from. Note that it is mandatory that you specify a facility, customer, or supplier name in this value field based on the selection in the Report For field. You can select only one value in this field.

### Master Summary Report Parameters Window

Plan

Report For

4. After making your selection, click OK to launch the report. This submits a concurrent request to generate the report. On the Requests window where you monitor the concurrent request, click View Output to view the Master Summary Report for the selected plan. You can print this report.

## Master Summary Report Data

The Master Summary Report includes the following key performance indicators.

- Total Orders
- Total Consolidated Shipments (count of deliveries carrying delivery lines in the plan)
- Total Net Weight
- Total Cubic Volume
- Total Pieces
- Value of Goods (based on list price)
- Truckload Trips
- LTL Trips
- Parcel Trips

- Total Transportation Cost
- Handling Cost
- Total Plan Cost
- Cost per Unit (Net) Weight
- Cost per Unit Cubic Volume
- Cost/Total Value (Total Plan Cost as a Percentage of the Value of Goods. Total Value is the cost of all order lines in the plan.)
- Stops per Truckload Trip
- Total Truckload Distance

For each facility of the host company, the Master Summary Report lists the following key performance indicators calculated over all orders originating or terminating at that facility.

- Facility Name
- Total Orders
- Total (Net) Weight
- Total Cubic Volume
- Total Pieces
- Truckload Cost
- Less-than-Truckload Cost
- Parcel Cost
- Total Cost
- Cost per Unit (Net) Weight
- Cost per Unit Cubic Volume
- Cost/Total Value (Total Plan Cost as a Percentage of the Value of Goods. Total Value is the cost of all order lines in the plan.)

For each carrier used, the Master Summary Report lists the following details in the order of truckload carriers, less-than-truckload carriers, and parcel carriers in alphabetical order within each category.

- Carrier name
- Number of trips assigned to the carrier

For origins and destinations in each state, province, and country served and for each customer and supplier served, the Master Summary Report lists the following:

- Origin and Destination State and Province (or Customer and Supplier Name for the Customer and Supplier section of the Master Summary Report)
- Total Orders
- Total (Net) Weight
- Total Cubic Volume
- Total Pieces
- Stops of Multi-Stop Truckloads (Stops at that facility or the facilities of that supplier or customer.)
- Direct Truckload Trips
- Less-than-Truckload Trips
- Parcel Trips
- Truckload Cost
- Less-than-Truckload Cost
- Parcel Cost
- Total Cost
- Cost per Unit (Net) Weight
- Cost per Unit Cubic Volume
- Cost/Total Value (Total Plan Cost expressed as a percentage of the total value of goods)

## Master or Carrier Trip and Shipment Detail Report

You can generate the Master or Carrier Trip and Shipment Detail Report in two flavors: Master and Carrier.

Each flavor of the report has a specific set of selection criteria and header information.

You can generate the Master flavor for the entire enterprise or for a specific facility, customer, supplier, or carrier. All Master Trip and Shipment Detail reports contain the following header information.

- Report Name
- Plan Name
- Plan Run Date and Time
- Plan Period (Plan Start Date and Time and Plan End Date and Time)
- Report Type (Master)
- Report for (Entire Plan or Shipper, Customer, Carrier, or Supplier facility)

The Carrier flavor of this report is produced separately for each truckload, less-than-truckload, and parcel carrier. It can be viewed online, printed, or transmitted electronically by e-mail to carriers. The generation of this report for printing or e-mailing can be realized for a single specified carrier or in a batch of all carriers. For a specified carrier, the Trip and Shipment Detail report includes the following header information.

- Report Name
- Plan Name
- Plan Run Date and Time
- Plan Period (Plan Start Date and Time and Plan End Date and Time)
- Report Type (Carrier)
- Report for (All Facilities or Name of Specific Facility)

Each flavor of the Trip and Shipment Detail report applies the appropriate criteria to determine which trips (truckloads and less-than-truckload/parcel trips) are included in the report. These criteria include:

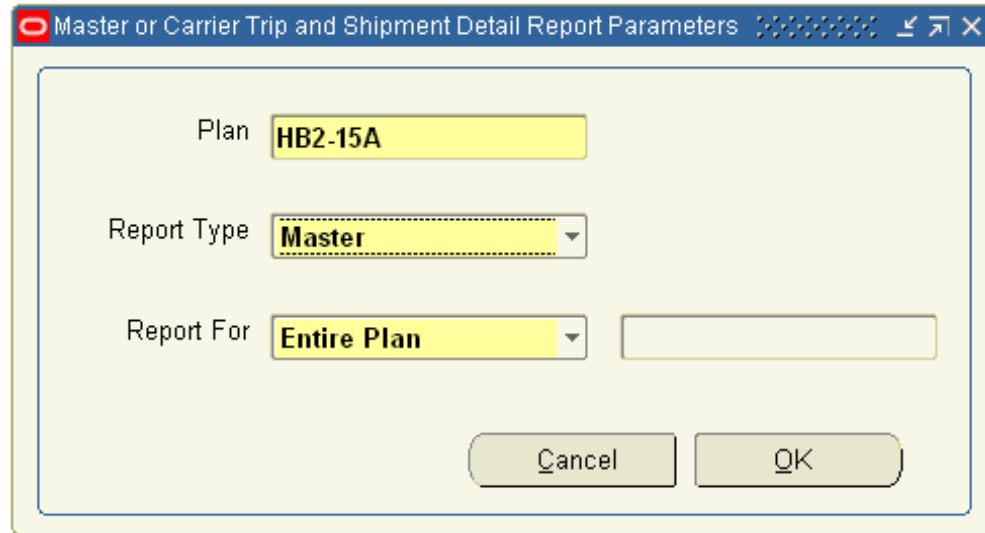
- Entire Plan: All trips
- Facility (host company, customer, or supplier): All trips originating, terminating, or stopping at that facility
- Customer or Supplier: All trips to all of the customer's or from all of the supplier's facilities
- Carrier: All trips assigned to that carrier

## Generating the Master or Carrier Trip and Shipment Detail Report

To generate the Master or Carrier Trip and Shipment Detail Report:

1. From the Reports menu in the Transportation Planner Navigator, select Master or Carrier Detail. This opens the Master or Carrier Trip and Shipment Detail Report Parameters window.

### *Master or Carrier Trip and Shipment Detail Report Parameters Window*



The screenshot shows a dialog box titled "Master or Carrier Trip and Shipment Detail Report Parameters". It contains three input fields: "Plan" with the value "HB2-15A", "Report Type" with a dropdown menu set to "Master", and "Report For" with a dropdown menu set to "Entire Plan" and an adjacent empty text box. At the bottom right are "Cancel" and "OK" buttons.

2. On the Master or Carrier Trip and Shipment Detail Report Parameters window, select the Plan name from a list of values.
3. Specify the flavor of the report you want to generate in the Report Type field: Master or Carrier.
4. In the Report For field, select a value from the list of values. You can generate the Master flavor of the Trip and Shipment Detail report for the whole enterprise, or for a specific shipper facility, customer, carrier, or supplier. You can generate the Carrier flavor for a specific carrier or for all carriers.

Based on your selection in the Report For field, the value field beside this field is enabled or disabled. If you select the Entire Plan option for the Master flavor or the All Carriers option for the Carrier flavor, the value field beside the Report For field remains disabled. For any other option you select in the Report for field, the value field is enabled and shows a list of values corresponding to the selection.

5. After making your selection, click OK to launch the report. This submits a concurrent request to generate the report. On the Requests window where you monitor the concurrent request, click View Output to view the Master or Carrier

Trip and Shipment Detail Report for the selected plan. You can print this report.

## Master or Carrier Trip and Shipment Detail Report Data

The Master or Carrier Trip and Shipment Detail Report contains the following information for each truckload in the plan.

- Carrier Name
- Service Name
- Total Distance
- Total (Gross) Weight
- Total Pick-Up Stops
- Total Delivery Stops
- Total Costs
- Total Distance-Based Charges (only in Master flavor)
- Trip Number
- Vehicle Type
- Total Cubic Volume
- Total Pieces
- Sum of Pool Collection or Distribution Costs Consolidating into and Deconsolidating from this Trip, including any Handling Costs at the Pool Points (only in Master flavor)
- Total Stop Charges (only in Master flavor)
- Total Accessorial Charges (loading, unloading, fuel surcharge, insurance, only in Master flavor)

For each stop the trip makes, including the initial pick-up, the report displays the following information.

- Sequence Number (consecutive)
- Load or Unload Activity at the Stop (L, U, or L/U)
- Distance From Previous Stop

- Driving Time from Previous Stop
- Distance-Based Charge from Previous Stop (only in Master flavor)
- Layover Charge between this and previous stop (only in Master flavor)
- Stop Charge (only in Master flavor)
- Location ID Code
- Location Company Name
- Location Street Address
- Location City
- Location State or Province
- Location Zip or Postal Code
- Location Contact Name
- Location Contact Phone Number
- Planned Arrival Date
- Planned Arrival Time
- Planned Departure Date
- Planned Departure Time
- Earliest Allowable Arrival Date
- Earliest Allowable Arrival Time
- Latest Allowable Departure Date
- Latest Allowable Departure Time
- Pieces to be Unloaded
- (Gross) Weight to be Unloaded
- Cubic Volume to be Unloaded
- Pieces to be Loaded



- (Gross) Weight to be Loaded
- Cubic Volume to be Loaded

If a stop is not a pool stop, for each order to be loaded or unloaded at the stop, the report displays the following information.

- Load or Unload Indicator (L or U)
- Host Company Order Reference Number
- Supplier or Customer Order Reference Number

If a stop is a pool stop, for each upstream origin, the report displays the following information.

- Trip Number
- Origin Location ID Code
- Origin Location Company Name (only in Master flavor)
- Origin Location Street Address (only in Master flavor)
- Origin Location City (only in Master flavor)
- Origin Location State or Province (only in Master flavor)
- Origin Location Zip or Postal Code (only in Master flavor)
- Pool Collection and Handling Cost (only in Master flavor)
- Pool Carrier ID

For each order to be loaded at the upstream origin, the report displays the following information.

- Host Company Order Reference Number
- Customer or Supplier Order Reference Number

For each downstream destination, the report displays the following information.

- Trip Number
- Destination Location ID Code
- Destination Location Company Name (only in Master flavor)
- Destination Location Street Address (only in Master flavor)

- Destination Location City (only in Master flavor)
- Destination Location State or Province (only in Master flavor)
- Destination Location Zip or Postal Code (only in Master flavor)
- Pool Distribution & Handling Cost (only in Master flavor)
- Pool Carrier ID

For each order that is unloaded at the downstream destination, the report displays the following information:

- Host Company Order Reference Number
- Customer or Supplier Order Reference Number

After the truckload information, the report lists the following data for each less-than-truckload or parcel trip in the plan. This includes collection or distribution legs into or out of pools and skip points. The less-than-truckload and parcel trips selected are ordered first by origin state or province, then by origin city, then by carrier, and then by planned pick-up date and time.

- Carrier Name
- Carrier Service Name
- Trip Number
- Carrier Comments field
- Facility Comments field (only in Master flavor)
- Origin Location ID Code
- Origin Location Company Name
- Origin Location Street Address
- Origin Location City
- Origin Location State or Province
- Origin Location Zip or Postal Code
- Planned Arrival (Pick-Up) Date at Origin
- Planned Arrival (Pick-Up) Time at Origin

- Destination Location ID Code
- Destination Location Company Name
- Destination Location Street Address
- Destination Location City
- Destination Location State or Province
- Destination Location Zip or Postal Code
- Destination Location Contact Name
- Destination Location Contact Phone Number
- Earliest Allowable Arrival Date at Destination
- Earliest Allowable Arrival Time at Destination
- Latest Allowable Departure Date at Destination
- Latest Allowable Departure Time at Destination
- Pieces
- (Gross) Weight
- Cubic Volume
- Total Plan Cost

For each order in the tender, the report lists the following information.

- Host Company Order Reference Number
- Supplier or Customer Order Reference Number
- Commodity Types (freight classes): up to ten distinct numbers

The report displays the trips ordered as follows.

1. Trips that are part of continuous moves, in the order that they occur in the continuous move, ordered by the planned initial pick-up time and date of the first trip in the move
2. Trips that are not part of continuous moves, ordered by the planned initial pick-up time and date

## Master Order Detail Report

You can use the Master Order Detail Report to research any inquiries regarding the shipping disposition of specific orders. It lists information for each delivery in the plan in numerical order of host company order reference number. Multiple records may exist for a single host company order reference number. This may be due to one of two reasons:

- The sales or purchase order was split into multiple deliveries due to heterogeneous origins or destinations for elements of the order
- The order was split into multiple deliveries due to exceeding a full truckload in cubic volume or weight

A delivery may be listed multiple times under multiple host company order reference numbers if it contains elements of multiple orders. Therefore, a delivery is not broken down so far as to separate the orders from each other. If this happens, the same identical record appears under each order.

Within the same host company order reference number, delivery records are ordered as follows.

- Initial origin location state or province (ascending alphanumerically)
- Initial origin location city (ascending alphanumerically)
- Final destination location state or province (ascending alphanumerically)
- Final destination location city (ascending alphanumerically)
- Projected departure date and time from origin (ascending)
- Cubic volume (descending)

Sequence numbers are assigned to deliveries within a shipment based on this ordering.

You can generate the Master Order Detail Report for the plan as a whole or for an individual customer, supplier, or facility.

Every Master Order Detail Report includes the following header information.

- Report Name
- Plan Name
- Plan Run Date and Time
- Plan Period (Plan Start Date and Time and Plan End Date and Time)

- Report for (Entire Plan or Shipper, Customer, or Supplier Facility)

## Generating the Master Order Detail Report

To generate the Master Order Detail Report:

1. From the Reports menu in the Transportation Planner Navigator, select Master Order Detail. This opens the Master Order Detail Report Parameters window.

**Master Order Detail Report Parameters Window**

The screenshot shows a dialog box titled "Master Order Detail Report Parameters". It contains two main input fields: "Plan" with the value "DG-P0-2" and "Report For" with a dropdown menu set to "Entire Plan". There is also an empty text box next to the "Report For" dropdown. At the bottom right, there are "Cancel" and "OK" buttons.

2. On the Master Order Detail Report Parameters window, select the Plan name from the list of values.
3. In the Report For field, select a value from the list of values. You can generate the report for the whole enterprise or for a specific shipper facility, customer, or supplier.
  - If you select Entire Plan in the Report For field, the system generates the report for the entire enterprise. In this case the value field beside the Report For field is disabled.
  - If you select Facility, Customer, or Supplier in the Report For field, the value field beside this field is enabled and shows a list of shipper facilities, customer names, or supplier names that you can select from. Note that it is mandatory that you specify a facility, customer, or supplier name in this value field. You can select only one value in this field.
4. After making your selection, click OK to launch the report. This submits a

concurrent request to generate the report. On the Requests window where you monitor the concurrent request, click View Output to view the Master Order Detail Report for the selected plan. You can print this report.

## Master Order Detail Report Data

For each order, the information in this report includes:

- Host Company Order Reference Number
- Supplier or Customer Order Reference Number
- Pieces
- (Net) Weight
- Cubic Volume
- Earliest Allowable Arrival Date and Time at Final Destination
- Latest Allowable Arrival Date and Time at Final Destination
- Total Transportation Cost (summed over all elements of the order)

For each delivery containing elements of the order, the report displays the following information.

- Sequence Number
- Initial Origin Location ID Code
- Initial Origin Company Name
- Initial Origin Location City
- Initial Origin Location State or Province
- Initial Origin Zip/Postal Code
- Final Destination Location ID Code
- Final Destination Company Name
- Final Destination Location City
- Final Destination Location State or Province
- Final Destination Location Zip or Postal Code

- Pieces
- (Net) Weight
- Cubic Volume
- Subtotal Cost (summed over all delivery legs)
- Projected Departure Date and Time at Initial Origin
- Projected Arrival Time at Final Destination

For each delivery leg in the delivery's route, the Master Order Detail report lists the following information.

- Sequence Number
- Mode Indicator (Truckload, Less-than-Truckload, Parcel)
- Carrier Name
- Trip Number
- Stop Sequence Number of Origin (sequence number of stop within the trip if the trip is a truckload, otherwise this field remains blank)
- Stop Sequence Number of Destination
- Origin Location Company Name
- Origin Pool Indicator
- Origin Location City
- Origin Location State or Province
- Destination Location Company Name
- Destination Pool Indicator
- Destination Location City
- Destination Location State or Province
- Projected Departure Time from Origin
- Projected Arrival Time at Destination
- Delivery Leg Transportation Cost (allocated cost)

## Facility Trip and Shipment Detail Report

You can generate the Facility Trip and Shipment Detail Report in three different flavors:

- Host company facility
- Supplier facility
- Customer facility

Shipping or receiving personnel at the various facilities of the company can use this report to plan their loading and unloading activities.

You can view the report online, format it for printing, or transmit it electronically by e-mail to facilities. You can generate this report for a single specified facility or in a batch for all facilities.

Each flavor of the Facility Trip and Detail Report has a specific set of selection criteria and header information.

- **Host Company Facility:** The Host Company Facility flavor of this report is produced separately for each of the company's facilities. For a specified facility, the report includes a header showing the following information:
  - Transportation Planning Department Name
  - Facility Name
  - Plan Name
  - Plan Period (Plan Start Date and Time and Plan End Date and Time)
  - Total Number of Truckload Trips Visiting the Facility in the Plan
  - Total Pieces to be Loaded or Unloaded for these Truckload Trips
  - Total (gross) Weight to be Loaded or Unloaded for these Truckload Trips
  - Total Cubic Volume to be Loaded or Unloaded for these Truckload Trips
  - Total Number of Less-than-Truckload Trips from the Facility in the Plan
  - Total Pieces to be Loaded or Unloaded for these Less-than-Truckload Trips
  - Total (Gross) Weight to be Loaded or Unloaded for these Less-than-Truckload Trips
  - Total Cubic Volume to be Loaded or Unloaded for these Less-than-Truckload Trips



- Total Number of Parcel Trips from the Facility in the Plan
- Total Pieces to be Loaded or Unloaded for these Parcel Trips
- Total (Gross) Weight to be Loaded or Unloaded for these Parcel Trips
- Total Cubic Volume to be Loaded or Unloaded for these Parcel Trips
- Supplier Facility: The Supplier flavor of this report is produced separately for each supplier facility originating freight in the plan. For a specified facility, the Facility Trip and Shipment Detail report includes the following information in the header.
  - Host Company Name
  - Supplier Company Name
  - Supplier Facility Name
  - Plan Period: Plan Start Date and Time and Plan End Date and Time
  - Total Number of Truckloads for the Facility in the Plan
  - Total Number of Less-than-Truckload Trips for the Facility in the Plan
  - Total Number of Parcel Trips for the Facility in the Plan
  - Total Pieces to be Handled
  - Total (Gross) Weight to be Handled
  - Total Cubic Volume to be Handled
- Customer Facility: The customer facility flavor of the Facility Trip and Shipment Detail report is produced separately for each customer facility receiving freight in the plan. For a specified facility, this report includes in its header the following information.
  - Host Company Name
  - Customer Company Name
  - Customer Facility Name
  - Plan Time Horizon: Plan Start Date and Time and Plan End Date and Time
  - Total Number of Truckloads for the Facility in the Plan
  - Total Number of Less-than-Truckload Trips for the Facility in the Plan

- Total Number of Parcel Trips for the Facility in the Plan
- Total Pieces to be Handled
- Total (Gross) Weight to be Handled
- Total Cubic Volume to be Handled

Regardless of flavor, the Facility Trip and Shipment Detail report presents truckloads first and then less-than-truckload and parcel trips.

## Generating the Facility Trip and Shipment Detail Report

**To generate the Facility Trip and Shipment Detail Report:**

1. From the Reports menu in the Transportation Planner Navigator, select Facility Trip and Shipment Detail. This opens the Facility Trip and Shipment Detail Report Parameters window.
2. On the Facility Trip and Shipment Detail Report Parameters window, select the Plan name from the list of values.
3. In the Report For field, select a value from the list of values. The report can be generated for a specific shipper facility, customer facility, or supplier facility.
  - If you select My Facility in the Report For field, the value field beside this field shows a list of values of shipper facilities you can select from. It is mandatory that you specify a facility name in the value field.

### Facility Trip and Shipment Detail Report Parameters Window

Plan

Report For

- If you select Customer facility or Supplier facility in the Report For field, two value fields appear below the Report For field: Customer or Supplier name and Customer or Supplier Facility name.

### Facility Trip and Shipment Detail Report Parameters Window

Plan

Report For

Customer

Facility

The fields show a list of values for Customer or Supplier names and Customer or Supplier Facility names corresponding to your selection in the Report For field. If you select a Customer or Supplier Name, then the Facilities list of values show only the facilities belonging to that specific Customer or Supplier. You may directly select a facility without specifying a Customer or Supplier

Name, in which case the Facilities list of values lists all the Customer or Supplier facilities. Note that it is mandatory that you specify a facility name in this value field. You can select only one value in these fields.

4. After making your selection, click OK to launch the report. This submits a concurrent request to generate the report. On the Requests window (View > Requests) where you monitor the concurrent request, click View Output to view the Facility Trip and Shipment Detail Report for the selected plan. You can print this report.

(Choosing Cancel on the Facility Trip and Shipment Detail Report Parameters window will close the window and return you to the Navigator.)

## Facility Trip and Shipment Detail Report Data

For each truckload trip visiting the facility in the plan, the report displays the following information ordered by arrival date and time at the facility.

- Carrier Name
- Carrier Phone Number
- Carrier Service Name
- Vehicle Type
- Trip Number
- Facility Comments (only in Host Company flavor)
- Planned Arrival Date
- Planned Arrival Time
- Planned Departure Date
- Planned Departure Time
- Earliest Allowable Arrival Date (only in Host Company flavor)
- Earliest Allowable Arrival Time (only in Host Company flavor)
- Latest Allowable Departure Date (only in Host Company flavor)
- Latest Allowable Departure Time (only in Host Company flavor)
- Pieces to be Unloaded

- (Gross) Weight to be Unloaded
- Cubic Volume to be Unloaded
- Pieces to be Loaded
- (Gross) Weight to be Loaded
- Cubic Volume to be Loaded

For each order to be loaded or unloaded at the stop, the report shows the following information.

- Load or Unload Indicator (U or L, only in Host Company flavor)
- Host Company Order Reference Number (only in Host Company flavor)
- Supplier or Customer Order Reference Number

For each less-than-truckload or parcel tender originating at a host company or supplier facility in the plan or, in the Customer flavor, destined for the customer facility, the report displays the following information. In the Host Company flavor, the information is ordered by planned departure date and time from the facility. In the Customer flavor, the information is ordered by planned arrival date and time at the facility.

- Carrier Name
- Carrier Service Name
- Carrier Phone Number
- Trip Number
- Facility Comments (Host Company flavor only)
- Planned Arrival (Pick-up) Date at Facility (Host Company flavor only)
- Planned Arrival (Pick-up) Time at Facility (Host Company flavor only)
- Earliest Allowed Arrival (Pick-up) Date at Facility (Supplier flavor only)
- Earliest Allowed Arrival (Pick-up) Time at Facility (Supplier flavor only)
- Latest Allowed Arrival (Pick-up) Date at Facility (Supplier flavor only)
- Latest Allowed Arrival (Pick-up) Time at Facility (Supplier flavor only)
- Earliest Allowed Arrival (Drop-off) Date at Facility (Customer flavor only)

- Earliest Allowed Arrival (Drop-off) Time at Facility (Customer flavor only)
- Latest Allowed Arrival (Drop-off) Date at Facility (Customer flavor only)
- Latest Allowed Arrival (Drop-off) Time at Facility (Customer flavor only)
- Destination Location Company Name (Host Company flavor only)
- Destination Location Street Address (Host Company flavor only)
- Destination Location City (Host Company flavor only)
- Destination Location State or Province (Host Company flavor only)
- Destination location zip or postal code (Host Company flavor only)
- Destination location contact name (Host Company flavor only)
- Destination location contact phone number (Host Company flavor only)
- Pieces
- (Gross) Weight
- Cubic Volume
- Total Predicted Cost (Host Company flavor only)

For each order in the trip, the report displays the following information:

- Host Company Order Reference Number (Host Company flavor only)
- Supplier or Customer Order Reference Number
- Commodity Type (Host Company flavor only)

## Pool and Skip Point Activity Detail Report

You can generate the Pool and Skip Point Activity Report separately for each consolidation or deconsolidation facility handling freight in the plan. This helps personnel at such facilities to plan activities in support of the host company.

This applies only to facilities performing only asymmetric pooling, that is, pooling in which line-haul trips are deconsolidated into or consolidated from less-than-truckload or parcel movements. Facilities performing symmetric pooling require the host company Facility Trip and Shipment Detail report and the Shuttle Activity Detail report. Symmetric pooling refers to pure cross-docking or hub and spoke operations that simultaneously deconsolidate inbound and consolidate outbound full truckloads.

You can generate this report for a single specified consolidation or deconsolidation facility or in a batch for all such facilities. For a specified facility, the report includes the following information in its header.

- Report Name
- Host Company Name
- Pool or Skip Point Company Name
- Pool or Skip Point Facility ID Code
- Pool or Skip Point Facility Name
- Plan Name
- Plan Period (Plan Start Date and Time and Plan End Date and Time)

## **Generating the Pool and Skip Point Activity Detail Report**

**To generate the Pool and Skip Point Activity Detail Report:**

1. From the Reports menu in the Transportation Planner Navigator, select Pool and Skip Point Activity Detail. This opens the Pool and Skip Point Activity Detail Report Parameters window.

***Pool and Skip Point Activity Detail Report Parameters Window***

Plan

Report For

2. On the Pool and Skip Point Activity Detail Report Parameters window, select the Plan name from a list of values.
3. In the Report For field, select a value from the list of values. You can generate the report for a specific shipper facility (My facility) or a carrier facility. Use the Report For field to make this selection.
  - If you select My Facility in the Report For field, the value field beside this field shows a list of values of shipper facilities you can select from. It is mandatory that you specify a facility name in the value field. You can select only one facility in this field.
  - If you select Carrier facility in the Report For field, two value fields are displayed below the Report For field: Carrier name and Carrier Facility name.



**Pool and Skip Point Activity Detail Report Parameters Window when Carrier Facility is selected in the Report For Field**

Plan

Report For

Carrier

Facility

The fields show a list of values for Carrier names and Carrier Facility names. If you select a Carrier Name, then the Facilities list of values shows only the facilities belonging to that specific carrier. You may directly select a facility without specifying a Carrier name, in which case the Facilities list of values lists all Carrier facilities. Note that it is mandatory that you specify a facility name in this value field. You can select only one value each in these fields.

4. After making your selection, click OK to launch the report. This submits a concurrent request to generate the report. On the Requests window where you monitor the concurrent request, click View Output to view the Pool and Skip Point Activity Detail Report for the selected plan. You can print this report or transmit it electronically by e-mail.

## Pool and Skip Point Activity Detail Report Data

For each inbound line-haul move to the facility, the Pool and Skip Point Activity Detail report shows the following information in the order of expected arrival date and time.

- Carrier Name
- Carrier Service Name
- Carrier Phone Number
- Trip Number
- Planned Arrival Date

- Planned Arrival Time
- Total Pieces
- Total (Gross) Weight
- Total Cubic Volume

For each deconsolidated outbound move coming from the inbound move, the report shows the following information.

- Carrier Name
- Carrier Service Name
- Carrier Phone Number
- Trip Number
- Destination Company Name
- Destination Company Location ID#
- Destination Phone Number
- Destination Address
- Destination City
- Destination State or Province
- Destination Zip or Postal Code
- Planned Delivery Date and Time
- Delivery Deadline Date and Time
- (Gross) Weight
- Cubic Volume
- Pieces

For each order in the outbound move, the report shows the following information.

- Host Company Order Reference Number
- Customer or Supplier Order Reference Number

For each outbound line-haul move from the facility, the report shows the following

information in the order of expected departure date and time.

- Carrier Name
- Carrier Service Name
- Carrier Phone Number
- Trip Number
- Planned Departure Date
- Planned Departure Time
- Destination Company Name
- Destination Company Location ID Number
- Destination Phone Number
- Destination Address
- Destination City
- Destination State or Province
- Destination Zip or Postal Code
- Total Pieces
- Total (Gross) Weight
- Total Cubic Volume

For each inbound move feeding the outbound move, the report shows the following information.

- Carrier Name
- Carrier Service Name
- Carrier Phone Number
- Trip Number
- Origin Company Name
- Origin Company Location ID Number

- Origin Phone Number
- Origin Address
- Origin City
- Origin State or Province
- Origin Zip/Postal Code
- Planned Pick-up Date and Time
- (Gross) Weight
- Cubic volume
- Pieces

For each order in the inbound move, the report will show the following information.

- Host Company Order Reference Number
- Customer or Supplier Order Reference Number

## Shuttle Trip Activity Detail Report

Shippers can use the Shuttle Trip Activity Report to evaluate the operation of shuttle truckloads to central consolidation points from other facilities. Each such shuttle truckload contains multiple groupings of cargo, each of which in turn corresponds to a different outbound trailer from the consolidation facility. In any given shuttle trailer, one cargo group may constitute a nose load. This cargo remains on board the same trailer that it comes into the consolidation facility on, even when that trailer goes out to points beyond.

Any company using a pure cross-docking operation can use this report. A pure cross-docking operation is one in which both deconsolidation and consolidation are performed on both inbound and outbound full truckloads.

You may generate the Shuttle Trip Activity Detail Report for all of the shuttle trips from a specific facility, regardless of carrier. You may also generate the report for all of the shuttle trips to be executed by a specific carrier, regardless of facility of origin. The upstream facilities and the carriers involved in planning the shuttle loading and transportation activities can use this report.

The Shuttle Trip Activity Detail Report includes the following information in its header.

- Report Name
- Name of Carrier or Facility the Report is Composed for

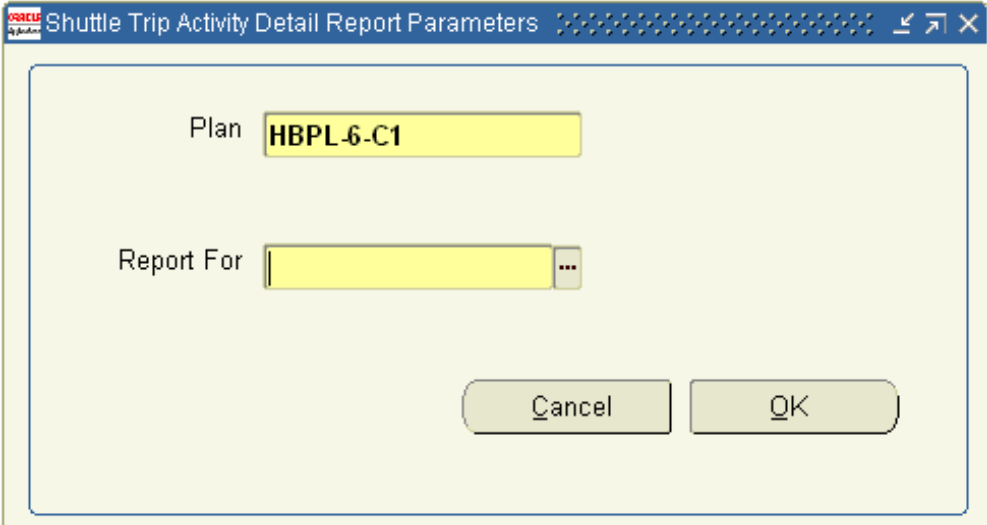
- Plan Name
- Plan Period: Plan Start Date and Time and Plan End Date and Time
- Host Company Name

## Generating the Shuttle Trip Activity Detail Report

To generate the Shuttle Trip Activity Detail Report:

1. From the Reports menu in the Transportation Planner Navigator, select Shuttle Trip Activity Detail. This opens the Shuttle Trip Activity Detail Report Parameters window.
2. On the Shuttle Trip Activity Detail Report Parameters window, select the Plan name from a list of values.
3. In the Report For field, select a value from the list of values. You can generate the report for a specific shipper facility. The list of values display all the shipper facilities. It is mandatory that you select a value in this field.

**Shuttle Trip Activity Detail Report Parameters Window**



The screenshot shows a window titled "Shuttle Trip Activity Detail Report Parameters". It contains two main input fields. The first field is labeled "Plan" and has a dropdown menu with the value "HBPL-6-C1" selected. The second field is labeled "Report For" and has a dropdown menu that is currently empty, with a small "..." button to its right. At the bottom right of the window, there are two buttons: "Cancel" and "OK".

4. After making your selection, click OK to launch the report. This submits a concurrent request to generate the report. On the Requests window where you monitor the concurrent request, click View Output to view the Shuttle Trip Activity Detail Report for the selected plan. You can print this report.

## Shuttle Trip Activity Detail Report Data

For each shuttle trip, the Shuttle Trip Activity Detail Report includes the following information.

- Carrier Name
- Trip Number
- Vehicle Type
- Origin Facility ID Code
- Origin Facility Name
- Origin Facility Address
- Origin Facility City
- Origin Facility State or Province
- Origin Facility Zip or Postal Code
- Origin Facility Phone Number
- (Intermediate) Destination Facility Name
- (Intermediate) Destination Facility Address
- (Intermediate) Destination Facility City
- (Intermediate) Destination Facility State or Province
- (Intermediate) Destination Facility Zip or Postal Code
- (Intermediate) Destination Facility Phone Number
- Planned Departure Date and Time
- Planned Arrival Date and Time
- Total Cost
- Total Distance
- Total Pieces
- Total (Gross) Weight

- Total Cubic Volume

For each delivery in the trip, the report includes the following information, ordered by outbound trip departure time and date:

- Sequence Number
- Comment field (This field is a blank space where you can enter handwritten comments.)
- Total Pieces
- Total (Gross) Weight
- Total Cubic Volume

For each order in the delivery, the report displays the following information.

- Outbound Trip Number
- Planned Departure Date and Time from Consolidation Facility
- Pieces
- (Gross) Weight
- Cubic Volume
- Pool Stop Indicator
- Destination Location Code
- Host Company Order Reference Number

If the move is a pool order, the report displays the following information.

- Final Destination Location Code

Note that Host Company Order Reference Number indicates the sales order number if one exists, otherwise, the purchase order or move order number as appropriate.





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## Updating Orders and Re-Optimizing Plans

This chapter covers the following topics:

- Overview of Order Updates and Re-Optimization
- Updating Orders
- Re-Optimizing Plans
- Order Update and Re-Optimization Impacts on Plan

### Overview of Order Updates and Re-Optimization

Oracle Transportation Planning obtains its delivery line data from Oracle Shipping Execution through a process called snapshot. The criteria involved in the snapshot of delivery lines are explained in 'Data Snapshot, page 8-1.

In business situations, changes may occur in delivery line information. For example, an order may be cancelled or its quantity, available to ship date, delivery deadline, origin, or destination may change.

The order update functionality in Oracle Transportation Planning enables you to identify such changes and to dynamically update plan input. The Re-Optimization functionality enables you to re-optimize an existing plan to accommodate the changes in delivery lines.

### Updating Orders

The order update functionality in Oracle Transportation Planning identifies changes in input to a plan that are related to delivery line information. The order update function does not capture real-time changes in the transportation network or setup information such as carrier data, rates, and facilities. To capture network and setup information, you must perform a complete re-snapshot of the plan. For more information on the snapshot process, see 'Data Snapshot, page 8-1.

The order update functionality identifies the following changes in delivery lines.

- Change in quantity, weight, or volume
  - Increase
  - Decrease
- Change in ship dates
  - Earliest ship date
  - Latest ship date
- Change in delivery dates
  - Earliest delivery date
  - Latest delivery date
- Change in origin
- Change in destination
- Cancelled order
- New order
- Change in freight terms

For delivery lines that are packaged, the order update process identifies any change in the package level information. The system does not consider changes on individual delivery lines within the package.

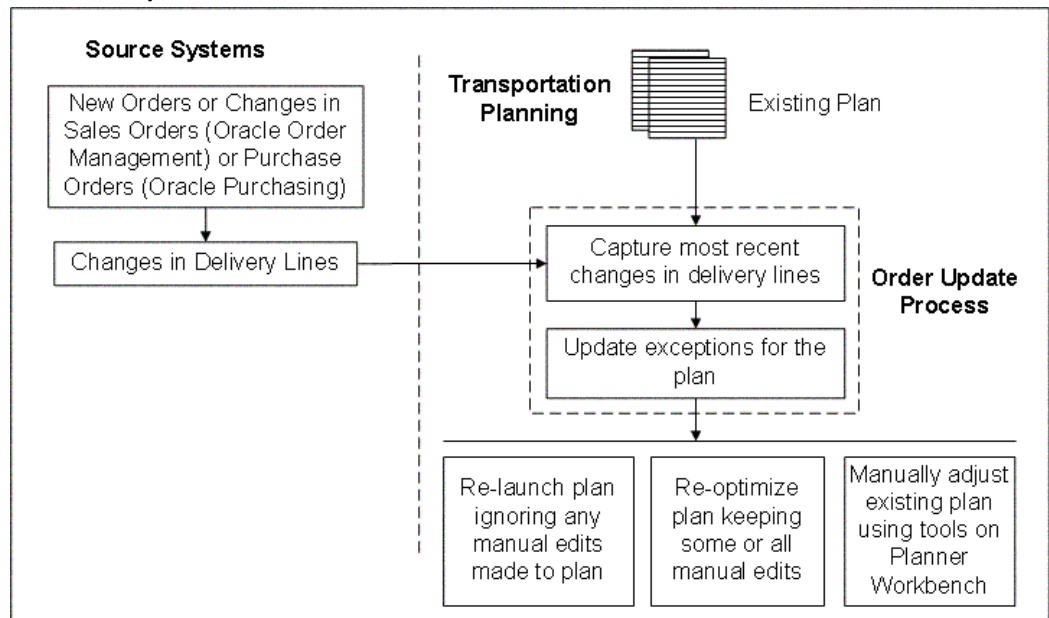
Note that the order update process does not consider the following changes on a delivery line.

- Change in ship set
- Change in release status

## The Order Update Process

The delivery line information that Oracle Transportation Planning captures is based on the plan scope you specify in the Plan Options window.

### The Order Update Process



New orders or changes in Sales Orders or Purchase Orders (including Internal Orders, Drop Ships, and Outside Processing) result in changes in delivery line information within Oracle Shipping Execution. For an existing plan in Oracle Transportation Planning, running the order update process captures the changes in delivery lines within the plan's scope and updates the exceptions for the plan. After the delivery line information is updated, you have the following options to handle the changes:

- Re-launch plan, ignoring any manual edits previously made to the plan
- Re-optimize plan, keeping some or all of the manual edits made to the plan
- Manually adjust existing plan, using tools available on the Planner Workbench

Use the following procedure to update order information.

#### To update orders:

1. On the Planner Workbench, select a plan and then the Update Orders option from the Plan menu. The Launch Update Order window opens with the Parameters window on top.

### Launch Update Order and Launch Update Order Parameters Window

The image shows two overlapping windows from a software application. The background window is titled "Launch Update Order" and contains three main sections: "Run this Request...", "At these Times...", and "Upon Completion...". The "Run this Request..." section has fields for "Name" (set to "Run Order Update Process"), "Parameters", and "Language" (set to "American English"). The "At these Times..." section has a "Run the Job" field set to "As Soon as Possible". The "Upon Completion..." section has a checked checkbox for "Save all Output Files". The foreground window is titled "Parameters" and contains fields for "Plan Name" (set to "EB-MU-10"), "Reoptimize Plan After Order Update" (set to "No"), "Allow Removal of Deliveries from Routing Firm Trips", and "Maintain User Edits". It also has a "Notify" field set to "Parameters" and a "Print to" field. Both windows have "OK", "Cancel", "Clear", and "Help" buttons at the bottom.

The parameters you can specify include:

- Plan Name: The Plan Name field is populated with the name of the plan you selected. However, you can select another plan in this field from the list of values.
  - Reoptimize Plan After Order Update: Select Yes or No. See 'Re-Optimizing Plans, page 15-7 for more information.
  - Allow Removal of Deliveries from Routing Firm Trips: Select Yes or No. See 'Handling of Routing Firm Trips During Re-Optimization, page 15-10 for more information.
  - Maintain User Edits: Select None, Firmied, or All. See 'Maintaining User Edits During Re-Optimization, page 15-9 for more information.
2. Click OK on the Parameters window. The Parameters field on the Launch Update Order window shows the parameters you specified.
  3. Click Submit on the Launch Order Update window to submit the Update Orders request.
  4. View the progress of the concurrent request in the Requests window. To access the Requests window, select Request from the View menu.
  5. When the Update Orders process is completed, the transportation planning system runs the exceptions process automatically. You can view the exceptions in the plan

by selecting the plan node on the navigation tree and then selecting the Exceptions right mouse click option.

You can address the updated orders and the corresponding exceptions in the following ways.

- Re-launch the plan. The system completely re-snapshots the delivery lines in the plan scope, including all the recent updates made to them. The system then plans for all of these delivery lines. Note that re-launching the plan discards any manual changes that are previously made to the plan.
- Re-optimize the plan while keeping some or all of the manual changes made to date in place. See 'Maintaining User Edits During Re-Optimization, page 15-9 for more information.
- Use planning tools available on the workbench to adjust the schedule manually without affecting any manual changes already made. See 'Modifying and Improving Plans, page 12-1 for more information.

## Order Changes and Examples of Resultant Exceptions

The following table presents some examples of exceptions that may typically result from specific changes in orders.

Change in Order (Delivery Line)	Examples of Resultant Exceptions
Increase in quantity, weight, or volume	<ul style="list-style-type: none"><li>• Overutilized Vehicle</li><li>• Insufficient Connect Time</li><li>• Lower Cost Carrier Available</li></ul>
Decrease in quantity, weight, or volume	<ul style="list-style-type: none"><li>• Underutilized Vehicle</li><li>• Lower Cost Carrier Available</li></ul>
New order	<ul style="list-style-type: none"><li>• Unassigned Deliveries</li></ul>
Change in ship dates	<ul style="list-style-type: none"><li>• Planned Early Ship</li><li>• Planned Late Ship</li></ul>

Change in Order (Delivery Line)	Examples of Resultant Exceptions
Change in delivery dates	<ul style="list-style-type: none"> <li>Planned Early Delivery</li> <li>Planned Late Delivery</li> </ul>
Change in origin or destination	<ul style="list-style-type: none"> <li>Unassigned Deliveries</li> <li>Underutilized Vehicle</li> <li>Empty Trips</li> <li>Dead Stops</li> </ul>
Cancelled order	<ul style="list-style-type: none"> <li>Underutilized Vehicle</li> <li>Empty Trips</li> <li>Dead Stops</li> </ul>

**Note:** 'Possible Exceptions Resulting from Changes in Orders, page 15-5 lists only some potential exceptions that may result from changes in orders. During the order update process, exceptions are generated for the same reasons as they are during the Launch Plan process. Also see 'Managing Exceptions, page 10-1 for more information.

The following example illustrates the impact of a decrease in quantity of a delivery line on a planned truckload move optimized through simple consolidation.

Suppose that the planned truckload move consists of the following delivery lines before the order update.

- Delivery line D1: San Francisco to Fresno: 15,000 lbs
- Delivery line D2: San Francisco to Fresno: 20,000 lbs

Total weight on the truck = 35,000 lbs

Suppose that a decrease in order quantities resulted in decrease in the quantities of delivery lines D1 and D2:

- Delivery line D1: decrease in quantity from 15,000 lbs to 5,000 lbs
- Delivery line D2: decrease in quantity from 20,000 lbs to 4,000lbs

After order update, the total weight of the truckload is 9,000 lbs.

This may result in exceptions such as Underutilized Vehicle and Lower Cost Carrier Available.

You may resolve such exceptions by re-optimizing the plan or manually modifying the plan using tools available on the Planner Workbench.

## Re-Optimizing Plans

The Re-Optimization functionality in Oracle Transportation Planning addresses the following planning scenarios:

- You have made manual changes to the plan output but want to return to the system generated output.
- You have made manual changes to the plan output and want to maintain some specific changes while the system replans the remaining delivery lines. See 'Maintaining User Edits During Re-Optimization, page 15-9 for more information.
- You have run the order update process and want the system to plan for any changed or new delivery lines.

The Launch Plan process captures delivery lines, firm deliveries, firm trips, and firm continuous moves that match the plan scope and then plans anew for all of these delivery lines. The Launch Plan process ignores any manual changes that you made to the plan before re-running the process.

The re-optimization process uses transaction data on the planning system that is previously captured through both snapshot and order update processes. The re-optimization process respects all or some manual changes you have made to the plan output, based on parameters you select when launching the process.

The Re-Optimization process enables you to:

- Re-plan delivery lines in the plan while maintaining some or all of the manual changes already made to the plan
- Plan for any changes in delivery lines or new delivery lines resulting from the order update process

## The Re-Optimization Process

Use the following procedure to re-optimize a plan.

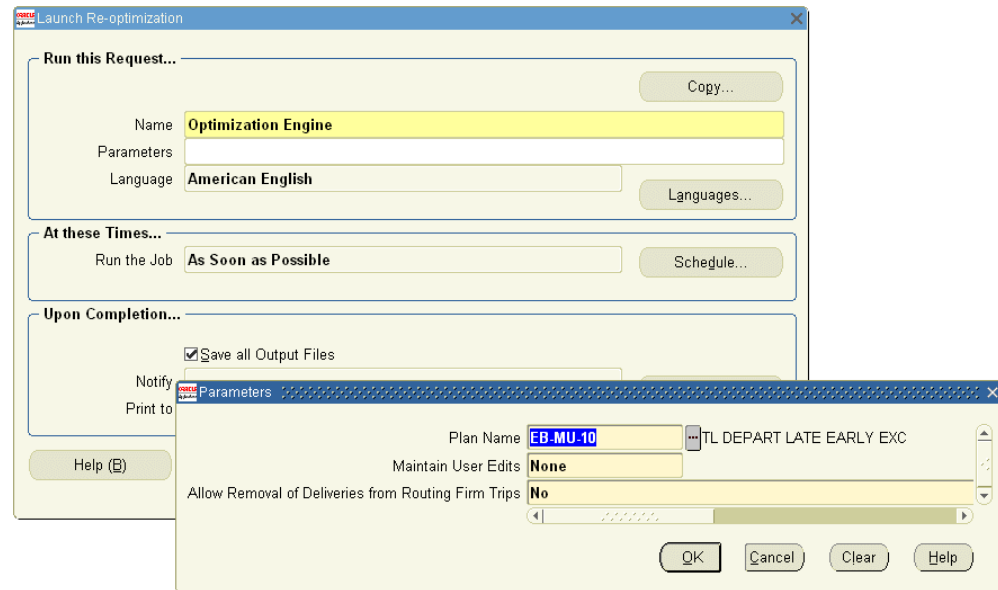
**Note:** When launching the Order Update process, if you select Yes in the Reoptimize Plan After Order Update parameter field, the system automatically optimizes the plan taking into consideration the updated

delivery line information.

**To re-optimize a plan:**

1. On the Planner Workbench, select a plan and then the Optimize Plan option from the Plan menu. The Launch Re-Optimization window opens with the Parameters window on top.

**Launch Re-Optimization Window and Launch Re-Optimization Parameters Window**



The parameters you can specify include:

- Plan Name: The system populates the Plan Name field with the name of the plan you selected. However, you can select another plan in this field from the list of values.
  - Maintain User Edits: Select None, Firmed, or All. See 'Maintaining User Edits During Re-Optimization, page 15-9 for more information.
  - Allow Removal of Deliveries from Routing Firm Trips: Select Yes or No. See 'Handling of Routing Firm Trips During Re-Optimization, page 15-10 for more information.
2. Click OK on the Parameters window. The Parameters field on the Launch Re-Optimization window shows the parameters you specified.
  3. Click Submit on the Launch Re-Optimization window to submit the re-optimization request.



You can view the progress of the concurrent request on the Requests window. When the system completes the re-optimization process, you can view the new plan output on the Planner Workbench.

### Maintaining User Edits During Re-Optimization

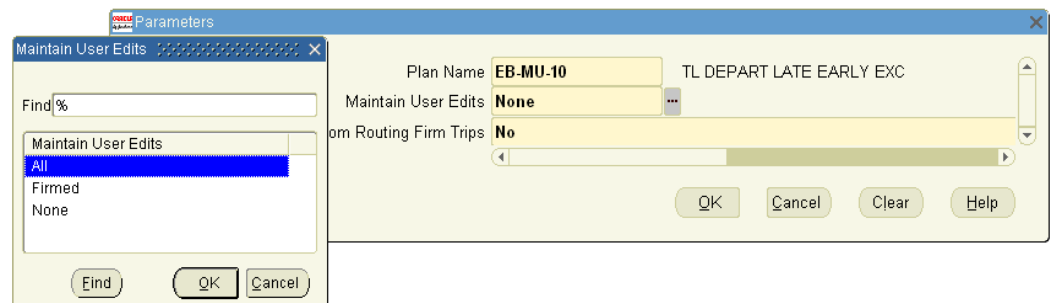
While working with a transportation plan, you may make various changes to trips or continuous moves in the plan. For example, you may move a delivery from one trip to another. When re-optimizing, you may or may not want to preserve some or all of the changes you have made while working with the plan.

Note the following:

- The system does not consider the following to be user edits.
  - A trip or a continuous move originally created by the optimization engine
  - A trip created through a quick trip build process
- The system does consider the following to be user edits.
  - Any trips that are created by other user actions, such as the Create Trip action
  - A trip that is modified in any way by a user action

The re-optimization functionality includes a run-time parameter called Maintain User Edits.

### Parameters Window and Maintain User Edits Window



The Parameters window with the Maintain User Edits field appears when you select a plan and then select Update Orders or Optimize Plan from the Plan menu. You can select any of the following options in the Maintain User Edits field in the Parameters window.

- **None:** Selecting this option is equivalent to launching the plan but with no new snapshot. The planning engine respects all of the trips and continuous moves captured through the previous snapshot as firm or already released as firm, but ignores any manual changes made by the planner. The planning engine does not

honor any trips that were created in previous plan runs and then firmed but not released.

- **Firmed:** Selecting this option respects only those user edits that have been explicitly firmed. The planning engine respects all of the trips and continuous moves that are captured through the previous snapshot as firm or already released as firm. The planning engine also respects all of the trips and continuous moves that are flagged as firm in the plan but are not yet released to the execution system.
- **All:** Selecting All respects all user edits. If you select this option, the transportation planning system handles trips and continuous moves as follows.
  - Respects all of the trips and continuous moves captured through the previous snapshot as firm or already released as firm
  - Respects all of the trips and continuous moves that are firm in the plan but not yet released to the execution system
  - Treats all trips that are marked as user edits as if they were Routing and Contents Firm for the duration of the re-optimization process
  - Treats all continuous moves that are marked as user edits as if they were Firm for the duration of the re-optimization process
  - Treats any trips related to these firm and user edit trips and continuous moves as if they were Routing Firm for the duration of the re-optimization processUse the Firm status field on the trip Details windows if you want to maintain some, but not all, of your edits.

The user-level profile option MST: Maintain User Edits controls the default setting for the Maintain User Edits parameter for re-optimization. The seeded value is set to No. Regardless of the profile option setting, you can select any value of this parameter when launching re-optimization.

### **Handling of Routing Firm Trips During Re-Optimization**

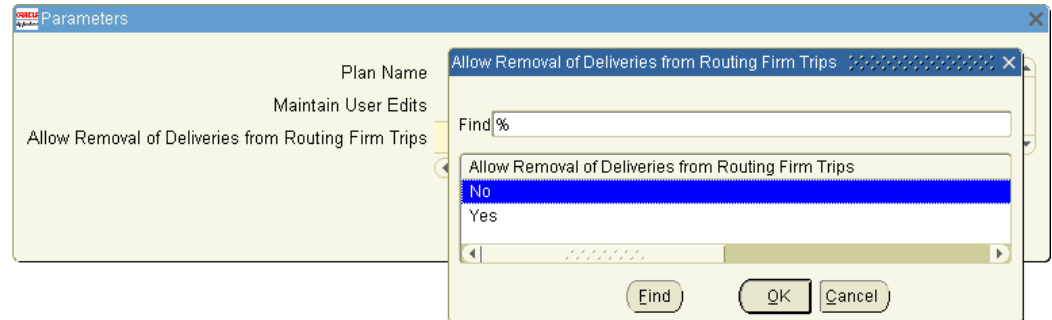
In Oracle Transportation Planning, you can firm a trip as Routing Firm or Routing and Contents Firm. For more information, see 'Firming, page 9-1.

In the process of re-optimization, Oracle Transportation Planning provides an additional flavor of Routing Firm status. This is a firm status in which the schedule, itinerary, carrier, service, and vehicle type of a trip are set. You cannot unassign deliveries from the trip but you can newly assign additional deliveries to it.

A run-time parameter in the re-optimization functionality enables you to select whether or not to allow removal of currently assigned deliveries from Routing Firm trips. When you select either the Update Orders or the Optimize Plan option from the Plan menu, the resulting Parameters window provides a field called Allow Removal of Deliveries

from Routing Firm Trips. The Allow Removal of Deliveries from Routing Firm Trips window opens when you try to enter a value in this field. You can select either of the following options.

**Parameters Window and Allow Removal of Deliveries from Routing Firm Trips Window**



- **Yes:** If you select Yes, the system can remove currently assigned deliveries from a Routing Firm trip during re-optimization. Note that the system can add new deliveries to the same trip subject to the Routing Firm trip, vehicle capacity, and other constraints. This parameter value corresponds to using the general definition of Routing Firm trips.
- **No:** If you select No, the system will not remove currently assigned deliveries from a Routing Firm trip during re-optimization. The system can add new deliveries to the same trip subject to the Routing Firm trip, vehicle capacity, and other constraints.

When the re-optimization process completes, the behavior of Routing Firm trips always returns to the usual manner, allowing deliveries to be either unassigned from or newly assigned to the trip.

The user-level profile option MST: Allow Removal of Deliveries from Routing Firm Trips controls the default value of the Allow Removal of Deliveries from Routing Firm Trips parameter. This parameter value is seeded to No. Regardless of the default setting, you can specify Yes or No when launching the re-optimization process.

## Order Update and Re-Optimization Impacts on Plan

This section provides examples to illustrate the impact of the order update and re-optimization processes on plan output.

### Restrictions

**Example 1: Change in earliest and latest ship dates of a delivery line on an optimized multi-stop truckload**

Early ship and late ship are hard constraints.

Suppose that a plan consists of the delivery lines shown in the following table.

Delivery Line	Origin - Destination	Earliest Ship Date	Latest Ship Date	Weight
D1	Sioux City to San Diego	Day 1	Day 1	30,000 lbs
D2	Denver to San Diego	Day 2	Day 2	15,000 lbs

The existing plan, before order update, calls for a multi-stop move from Sioux City to Denver to San Diego.

If the earliest and latest ship dates of delivery line D2 both change to Day 1, running the order update process results in a Planned late ship exception since the plan will have arranged the shipment of delivery D1 on Day 2. If you now run the re-optimization process, the planning engine may recommend two direct trips:

- Sioux City to San Diego, departing on Day 1
- Denver to San Diego, departing on Day 1

**Example 2: Change in earliest and latest delivery dates of a delivery line on an optimized multi-stop truckload**

Early and late delivery are hard constraints.

Suppose that a plan consists of the delivery lines shown in the following table.

Delivery Line	Origin - Destination	Earliest Delivery Date	Latest Delivery Date	Weight
D1	Sioux City to San Diego	Day 3	Day 3	30,000 lbs
D2	Denver to San Diego	Day 4	Day 4	15,000 lbs

The existing plan in this case, before order update, calls for two direct trips from Sioux City to San Diego and from Denver to San Diego.

If the earliest delivery and latest delivery date of Delivery line D2 both change to Day 3 and you run the order update process, Planned late delivery and other exceptions may result since the plan will have arranged the shipment of delivery D2 on Day 4. On re-optimizing the plan, the planning engine may recommend a multi-stop move: Sioux City - Denver - San Diego with delivery at San Diego on Day 3.

**Example 3: Change in origin of a delivery line on a planned trip**

Pooling and multi-stop truckloads are the optimization strategies.

Suppose that the plan consists of the delivery lines shown in the following table.

Delivery Line	Origin - Destination	Weight
D1	Fresno to Sioux City	10,000 lbs
D2	Vandenberg to Sioux City	10,000 lbs

The plan output, before order update, is a pool move from Fresno and Vandenberg, by way of the nearest specified pool point, to Sioux City.

Consider a change in origin of Delivery line D2 from Vandenberg to Phoenix.

After order update, Unassigned delivery and Empty trip exceptions result as the Phoenix-Sioux City order is unassigned from the Vandenberg-pool point-Sioux City itinerary. Upon plan re-optimization, the planning engine may recommend a multi-stop truckload: Fresno - Phoenix - Sioux City.

**Example 4: Change in Freight Terms of a Delivery Line**

The delivery lines snapshot from the transportation execution system depend on the profile option *Maintaining User Edits During Re-Optimization* settings for freight terms. See *Impact of Freight Terms on Snapshot of Delivery Lines*, page 8-9 for details on profile options for freight terms.

A change in freight terms of an order during order update can result in that order entering or leaving the plan. The effect is the same as that of a new order or a cancelled order.

For example, consider the delivery lines in the following table.

Delivery Line	Origin/Destination	Weight	Freight Terms
D1	San Francisco to Phoenix	25,000 lbs	Prepaid
D2	San Francisco to Phoenix	15,000 lbs	Collect
D3	San Francisco to Phoenix	10,000 lbs	Third Party Billing

If you launch a plan with profile option for outbound freight terms set to Prepaid, only delivery line D1 is captured in the snapshot.

Suppose that the plan, before updating orders, consists entirely of a less-than-truckload trip from San Francisco to Phoenix carrying delivery line D1.

If the freight terms for delivery line D2 are now changed from Collect to Prepaid, then the order update process captures delivery line D2. This results in the Unassigned delivery exception (D2 being an unassigned delivery).

Since delivery lines D1 and D2 are now part of the plan, on re-optimization, the planning engine may recommend a truckload trip from San Francisco to Phoenix carrying delivery lines D1 and D2.

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## Releasing Plan Output for Execution

This chapter covers the following topics:

- Overview of Releasing Plan Output
- Accessing the Release Function on the Planner Workbench
- Releasing Trips Directly
- Flagging Trips for Release
- Finding Best Candidates for Release
- Related Trips
- Viewing Release Counts
- Release Process Conditions
- Impacts of Firming on Releasing
- Releasing Out-of-Scope Deliveries and Trips
- Release Process Validations

### Overview of Releasing Plan Output

Transportation plan output includes continuous moves, trips, delivery legs, stops, and deliveries. Release is the process of publishing this information from Oracle Transportation Planning to execution systems.

You can perform plan output release in different ways:

- Release entire plan
- Release planned trips as per auto-release rules
- Release any trip or continuous move directly
- Flag trips and continuous moves for release and then release all flagged items

- Search for and release the best candidates for release

This chapter explains, in detail, the rules that apply to the release process and the procedures involved in the different methods of release.

**Note:** The release process from Oracle Transportation Planning to the transportation execution system does not release pricing or costing of the trips. To automatically rate the released trips from planning in the transportation execution system, you can set the Auto Rate Released Trip to At Release in the Global Parameters window. To access the Global Parameters window, use the Manufacturing and Distribution Manager responsibility.

## Accessing the Release Function on the Planner Workbench

You may access the Release function on the Planner Workbench in any of these ways

### Access the Release function using the navigation tree and the Tools menu

To release one or more trips or flag them for release, select the appropriate node or nodes on the navigation tree. Then select the Tools menu option Release Trip(s) or Flag for Release. The trip or trips can be truckload, less-than-truckload, parcel, or continuous moves. Note that if you select Release Trip(s), the Release window first opens. You must then click the Release button on this window to submit the trips for release.

### Access the Release function using the navigation tree and the Plan menu

To release an entire plan or all flagged trips in a plan, select the plan node on the navigation tree and then select one of the following Plan menu options.

- Release Flagged Trip(s): Releases all the trips that are flagged in the selected plan.
- Release Entire Plan: Releases all the trips in the plan.
- Apply Auto Release Rules: Applies the auto-release rule set (see 'Defining Auto-Release Rules for Planned Trips, page 6-35 for more information) to the current state of the selected plan to identify and release entities that match the rules.

### Access the Release function from the Map

To release a trip or flag it for release, select the entity on the Map window and then select the right mouse click option Release - Trip or Release - Flag for Release. The trip can be truckload, less-than-truckload, parcel, or a continuous move. Note that you must select the Select and Perform Actions radio button on the Map window before you can select an entity on the map and perform these actions.

When you select the Release - Trip action on the Map window, the Release window



opens showing the selected trip and any exceptions associated with it. To submit the trip for release, you must click the Release button on the Release window.

## Releasing Trips Directly

Use the following procedure to release trips directly. A trip here refers to a truckload, less-than-truckload, or parcel trip or a continuous move.

For information on release methods, impacts, and validations, see 'Release Process Conditions, page 16-15.

### To release trips:

1. Select an appropriate node (or nodes) on the navigation tree and then select one of the following as is appropriate:
  - Release Trip(s) from the Tools menu
  - Release Entire Plan from the Plan menu
  - Release Flagged Trip(s) from the Plan menu
  - Apply Auto Release Rules from the Plan menu

Note that you may also release a trip from the Map window by selecting the trip on the map and then selecting the right mouse click option Release - Trip.

Any of these procedures opens the Release window with the relevant tab or tabs enabled. See 'Tabs in the Release Window, page 16-4 for more information.

### Release Window: Plan Tab

Plan: **HBPL-9-PO Inbound + Drop Ship**

Plan | TLs | LTLs/Parcels | Continuous Moves

Cost	
Total	4,329.17 USD
Without Consolidation	6,919.89 USD
Savings	2,590.71 USD

Dates	
Plan Start	03-OCT-2006 00:00
Plan End	04-OCT-2006 23:59
Last Run	18-FEB-2004 13:46

TLs in Continuous Moves: 0 %

Trip Counts	
Total Direct TLs	2
Total Multi-Stop TLs	0
Total LTLs	3
Total Parcels	0
Total Continuous Moves	0

Weights and Volumes	
Total Weight (Gross)	24,375 Lbs
Total Cube	2,150 FT3
Total Pallets	0
Total Pieces	675
Total Orders	4

Exceptions: Total Exceptions 6

Buttons: Cancel, Add To Map, Map, Plan Summary, Release, Related Trips

2. Select a trip or trips in the TLs, LTLs/Parcels, or Continuous Moves tab and then click Release. This submits the selected trip or trips for release.

Note that choosing the Release button when the Plan tab is enabled releases the entire plan.

When you click Release, a window displaying the count of trips submitted for release appears. This window appears when you click the Release button regardless of whether release has failed or succeeded. The window displays the number of truckloads (including the number in continuous moves and the number of deadheads), the number of less-than-truckload trips, and the number of parcel trips submitted for release.

3. Click OK on this confirmation window.

You may monitor the progress of the release as well as view the log file of the release by accessing the Requests window, using the specific concurrent request ID. To access the Requests window, select Requests from the View menu.

### Tabs in the Release Window

The Release window contains the following tabs.

- Plan
- TLs

- LTLs/Parcels
- Continuous Moves

The tabs on the Release window are enabled or disabled based on the selection you make on the navigation tree or map. For example, if you select a plan on the navigation tree and then select the Release Entire Plan action, the only tab that is enabled on the Release window is the Plan tab. You cannot select a single trip or a continuous move in the plan for individual release from this window. This is because selecting the plan assumes the release of the entire plan. If you want to release specific plan elements, select one or more truckloads or one or more continuous moves on the navigation tree and then select the Release Trip(s) action from the Tools menu. The Release window opens with both the TLs and the Continuous Moves tabs enabled.

Note that the same Release window appears if you select the Plan menu option Apply Auto-Release Rules. In this case, all the trips corresponding to the auto-release rule set appear on the relevant tabs of the Release window.

Each tab except the Plan tab, which has a summary screen, displays a column for exceptions. The system populates this column with a warning icon if a trip that you selected for release has any exceptions associated with it. When you select a record with the Exceptions column populated, the corresponding exceptions appear in the Exceptions block of the window, in alphabetical order.

## Buttons on the Release Window

### Cancel

Click this button to close the Release window and abort the Release process.

### Select All

Click this button to select all the trips in the currently displayed tab of the Release window. You can then perform any action for all the trips simultaneously, using other buttons on the window. This button is not available on the Plan tab of the Release window.

### Map

Select one or more trips and click this button to open the Map window with the selected trip or trips displayed on it.

### Add to Map

Select one or more trips and then click the Add to Map button to display the selected trip or trips on the already existing Map window. Any previously existing map data remains displayed on the map. Note that this button functions in the same manner as the Map button if the Map window is not already open.

On the Plan tab, the Add to Map button remains disabled. Choosing the Map button on the Plan tab opens the Map window displaying all the trips in the plan.

### Details

Select a trip and then click the Details button to open the appropriate Details window (Truckload Details, LTL Details, Parcel Details, or Continuous Move Details). You cannot select more than one record at a time to view details. On the Plan tab, a Plan Summary button is available instead of the Details button.

### **Release**

Select one or more trips and click the Release button to release the selected trip or trips as well as any related trips.

### **Related Trips**

Select a trip and click the Related Trips button to open the Related Trips window. You cannot select more than one record to perform this action. This button is not enabled on the Plan tab.

## **Flagging Trips for Release**

Every trip has a Release flag associated with it. The Release flag is displayed as a check box on the trip's Details window. If you select (check) the Release flag for a trip, the system flags the trip for release. This provides a means to quickly identify trips that you want to release subsequently through the Release Flagged Trips function.

When you release a trip, the planning system automatically clears the Release flag. This enables you to make further modifications to the trip, if required, and to re-check the Release flag for subsequent re-release.

You can flag a truckload, less-than-truckload, parcel trip or a continuous move for release in any of the following ways.

- Select the trip or trips on the navigation tree and then select the Flag for Release option from the Tools menu.
- Select the trip or trips on the Map and then select the right mouse click option Release - Flag for Release.
- Double-click the Release field corresponding to the trip on the trip's Summary window. You can change the Release status by double-clicking the Release field entry on the following trip summary windows.

An **X** in the Release field indicates that the trip is not flagged for release and a check mark denotes that the trip is flagged for release.

- All Truckloads Summary
- All LTL Summary
- All Parcel Summary
- All Continuous Moves Summary

- Select the Release check box in the trip's Details window.

You can edit the Release check box on the following trip detail windows.

- Truckload Details
- LTL Details
- Parcel Details
- Continuous Move Details

To complete the release of the trips flagged for release, you must select the plan node on the navigation tree and then select the Release Flagged Trip(s) option from the Plan menu.

## Finding Best Candidates for Release

You can find candidates for release by selecting the Find Release Candidates option on the Tools menu.

### To find the best candidates for release:

On the navigation tree of the Planner Workbench, select a Plan node and then select Find Release Candidates from the Tools menu. This opens the Release Candidates window displaying the best release candidates categorized in tabs as follows.

- Time critical truckload trips
- Time critical less-than-truckload and parcel trips
- High utilization truckload trips

You may also access the Release Candidates window from the Exceptions and Recommendations window. To access the Exceptions and Recommendations window, select a plan node on the navigation tree and then select the Exceptions right mouse click option. Click the Find Release Candidates button on the Exceptions and Recommendations window to access the Release Candidates window.

### Tabs in the Release Candidates Window

#### Time Critical TLs

This tab displays the truckload trips with the least time left before they need to depart. By default, the Release Candidates window displays the truckload trips in ascending order of time left.

Time Left = Planned Arrival Date and Time at First Stop - Current Date and Time

The trip details on the Release Candidates window include information that enables

you to determine whether a trip should be released. These trip details include carrier, service, cost, time left, utilization, circuitry, and the exceptions associated with the trip. When you select a trip that has its Exceptions column populated with a warning icon, the exceptions related to that trip appear in the Exceptions block of the window.

#### Release Candidates Window: Time Critical TLs Tab

Plan **RP-MU-22** **manl updt scnro 22**

**Time Critical TLs** Time Critical LTLs/Parcels High Utilization TLs

Releasing a trip will also release its related trips

Exceptions	Trip	Carrier	Service	Vehicle Type	Origin Company	Origin City
• ⚠	17	NewCo	STANDARD	53_DV_N	My Company	Raleigh
	16	JB Hunt	STANDARD	53_DV	My Company	Raleigh
⚠	18	Schneider	STANDARD	53_DV	My Company	Gadsden
	20	CRST	STANDARD	53_DV	My Company	Gadsden
	19	CRST	STANDARD	53_DV	My Company	Gadsden
	15	Knight	STANDARD	53_DV	My Company	Provo
⚠	22	JB Hunt	STANDARD	53_DV	My Company	Sacramento
	21	JB Hunt	STANDARD	53_DV	My Company	Sacramento

—Exceptions—

Exception Description

- Trip 17 (NewCo, Raleigh-Raleigh) has a lower cost carrier available: Knight @ 306 vs. 322.

Cancel Select All Add To Map Map Trip Details Release Related Trips

#### Time Critical LTLs/Parcels

This tab displays the less-than-truckload and parcel trips that have the least time left before departure. By default, the Release Candidates window displays the trips in ascending order of time left.

Time Left = Planned departure date and time at origin - Current date and time

The trip details on the Release Candidates window include information that enables you to determine whether or not the trips should be released. These details include carrier, service, time left, cost, and exceptions associated with the trip. When you select a trip that has its Exceptions column populated with a warning icon, the exceptions associated with the trip appear in the Exceptions block of the window.

### Release Candidates Window: Time Critical LTLs/Parcels Tab

Release Candidates

Plan **RP-MU-22** **manl updt scnro 22**

Time Critical TLs **Time Critical LTLs/Parcels** High Utilization TLs

Releasing a trip will also release its related trips

Exceptions	Trip	Mode	Carrier	Service	Origin Company	Origin City
	26	LTL	Con-Way	LTL Standa...	My Company	Raleigh
	27	LTL	Con-Way	LTL Standa...	My Company	Gadsden
⚠	23	LTL	Yello	LTL Standa...	My Company	Provo
	28	LTL	Con-Way	LTL Standa...	My Company	Sacramento
⚠	29	Parcel	RP-P-1	Ground	My Company	Raleigh
⚠	24	LTL	Con-Way	LTL Standa...	My Company	Provo
⚠	25	LTL	Con-Way	LTL Standa...	My Company	Provo

—Exceptions—

Exception Description

- Trip 23 (Yello, Provo-Provo) has a lower cost carrier available: Con-Way @ 351 vs. 405.

Cancel Select All Add To Map Map Trip Details Release Related Trips

### High Utilization TLs

This tab displays the truckload trips with the highest utilization. By default, the High Utilization TLs tab in the Release Candidates window displays the truckload trips in descending order of utilization percentage.

Utilization = Max {peak weight percentage utilization, peak cube percentage utilization, peak pallet percentage utilization}

The trip details on this tab include information that enables you to determine whether or not the trip should be released. These details include carrier, service, cost, time left before departure, utilization, circuitry, and exceptions associated with the trip. When you select a trip that has the Exceptions column populated with a warning icon, the exceptions associated with this trip appear in the Exceptions block of the window.

### Release Candidates Window: High Utilization TLs Tab

Plan **RP-MU-22** **manl updt scnro 22**

Time Critical TLs Time Critical LTLs/Parcels **High Utilization TLs**

Releasing a trip will also release its related trips

Exceptions	Trip	Carrier	Service	Vehicle Type	Origin Company	Origin City
	<b>19</b>	<b>CRST</b>	<b>STANDARD</b>	<b>53_DV</b>	<b>My Company</b>	<b>Gadsden</b>
	21	JB Hunt	STANDARD	53_DV	My Company	Sacramento
	15	Knight	STANDARD	53_DV	My Company	Provo
!	17	NewCo	STANDARD	53_DV_N	My Company	Raleigh
	20	CRST	STANDARD	53_DV	My Company	Gadsden
	16	JB Hunt	STANDARD	53_DV	My Company	Raleigh
!	18	Schneider	STANDARD	53_DV	My Company	Gadsden
!	22	JB Hunt	STANDARD	53_DV	My Company	Sacramento

—Exceptions

Exception Description

Cancel Select All Add To Map Map Trip Details Release Related Trips

### Buttons on the Release Candidates Window

#### Cancel

Click this button to close the Release Candidates window and abort the Find Release Candidates process.

#### Select All

Click this button to select all the trips in the currently displayed tab of the Release Candidates window. You can then perform any action for all the trips simultaneously, using other buttons on the window.

#### Map

Select one or more trips and click this button to open the Map window with the selected trip or trips displayed on the window.

#### Add to Map

Select one or more trips and then click the Add to Map button to display the selected trip or trips on the already existing Map window. Note that this button functions in the same manner as the Map button if the Map window is not already open.

#### Trip Details

Select a trip and then click the Trip Details button to display the trip details on a



separate window on top of the Release Candidates window. For example, if you select a truckload trip and then click this button, the Truckload Details window appears on top of the Release Candidates window. You cannot simultaneously select more than one trip to perform this action on.

### Related Trips

Select a trip and then click the Related Trips button to open the Related Trips window that displays the trips related to the selected trip. You cannot simultaneously select more than one trip to perform this action on.

### Release

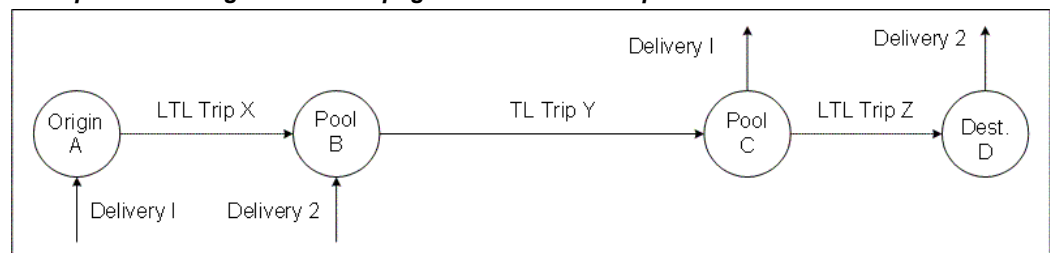
Select one or more trips and then click the Release button to launch a concurrent request to release the trip or trips.

## Related Trips

Trips carry deliveries. Sometimes, the same delivery can have delivery legs on multiple trips. If two trips have at least one delivery in common, the system considers them to be related trips. When you release a trip, the deliveries that are on the trip are also released. To release a delivery without all of the trips in its itinerary makes the release process incomplete. Therefore, Oracle Transportation Planning releases all of the trips that make up the delivery's itinerary. Related trips are trips that are not selected for release, but are released because they are part of the itinerary of a delivery on a trip that is selected for release.

Consider the following example.

#### **Example Illustrating Release Propagation to Related Trips**

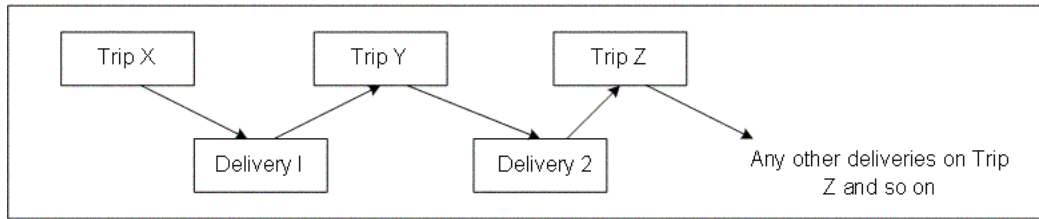


Delivery 1 travels from Origin A to Pool Point B by less-than-truckload trip X and from Pool Point B to Pool Point C, its destination, by truckload trip Y. Delivery 2 travels from its origin, Pool Point B, to Pool Point C by truckload trip Y and then from Pool Point C to its destination, D, by less-than-truckload trip Z.

In this example, to release Trip X, which carries Delivery 1, without also releasing Trip Y, which carries Delivery 1 and Delivery 2, could create problems in executing the plan. Similarly, to release Trip Y without also releasing Trip Z, which carries Delivery 2 could create problems. For this reason, Oracle Transportation Planning propagates the release of any trip to release also any related trips. The following illustration shows the release

propagation.

**Example Illustrating Release Propagation to Related Trips**



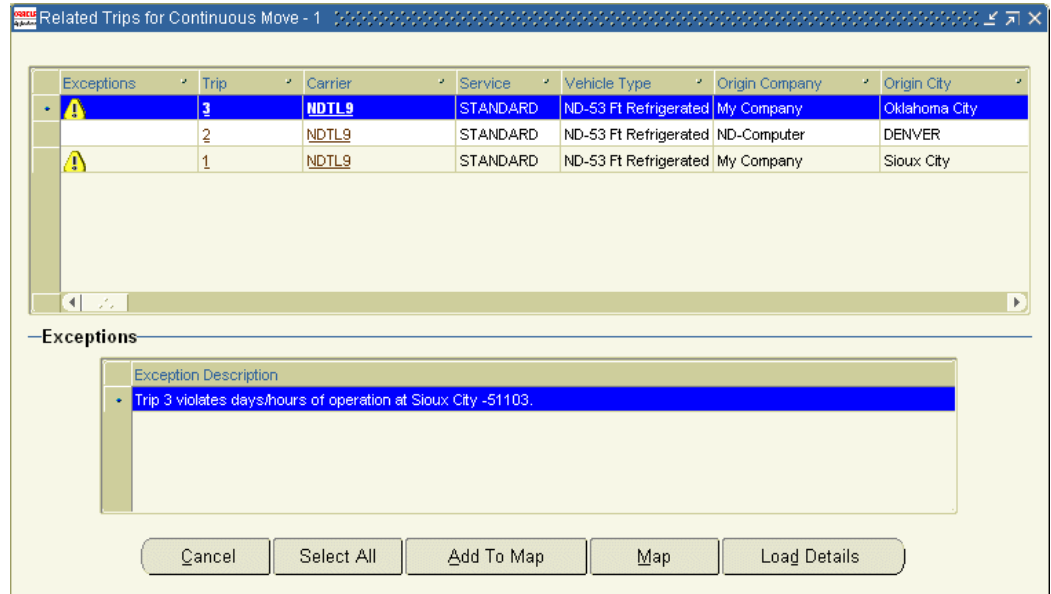
Releasing Trip X means that Delivery 1 is also released. Since Delivery 1's itinerary also involves Trip Y, the system releases Trip Y also. Furthermore, since Trip Y also carries Delivery 2, Delivery 2 is released. The release of Delivery 2 requires the release of Trip Z, which is part of Delivery 2's itinerary, and so on.

In the case of a cross-docking scenario, such a propagation of release can be very extensive.

In addition, if the release process includes any part of a continuous move, then the system releases all of the trips in the continuous move.

You can view the trips related to a trip selected for release using the Related Trips button available on the Release Candidates window or the Release window. Select a trip and click Related Trips on either of these windows to open the Related Trips window. The Related Trips window shows the trips related to the selected trip.

### Related Trips Window



The Related Trips window displays an Exception column similar to that of the Release window. Select a related trip that has the Exceptions column populated with a warning icon to view the exceptions associated with that trip. Exceptions associated with the trip appear in the Exceptions block of the Related Trips window.

## Viewing Release Counts

You can view the various release related counts on the Exceptions and Recommendations window. You can access the Exceptions and Recommendations window by selecting an appropriate node on the navigation tree and then selecting the Exceptions right mouse click option.

### Exceptions and Recommendations Window

Exceptions and Recommendations (HBPL-3-18F)

**Summary**

Exception Type	Exception Group	Count	Rank
Under-utilization of vehicle capacity	Vehicle exceptions	1	26

**Recommendations**

Group	Auto Released	Released	Release Failed	Flagged For...	Unreleased
TLS	0	1	0	0	0
LTLs	0	2	0	0	0
Parcels	0	0	0	0	0
Continuous Mov...	0	0	0	0	0

Find Release Candidates Details

The Exceptions and Recommendations window displays the counts for trips that are Auto-Released, Released, Release Failed, Flagged for Release, and Unreleased.

- The Auto-Released column displays the count of trips successfully released based on auto-release rules specified on the Plan Options window. See 'Defining Auto-Release Rules for Planned Trips, page 6-35 for more information.  
Note that this count only includes trips released automatically in conjunction with a plan run. It does not include trips released due to manual application of the auto-release rules from the Plan menu.
- The Released Column shows the count of successfully manually released trips. The count does not include trips that were auto-released.
- The Release Failed column shows the count of trips of which release was attempted,

manually or automatically, but failed.

- The Flagged for Release column displays the count of trips that are marked for release, but not yet released.
- The Unreleased column shows the count of trips that are not released. This includes trips that are flagged for release.

Note the following in considering these release counts.

- If the system automatically releases a trip and you subsequently manually edit and re-release the trip, the trip is counted as Released, not as Auto-Released.
  - If you re-release a trip that was previously successfully released, automatically or manually, and the re-release fails, the system counts the trip as Release Failed, not as Released or Auto-Released.
  - When you release a flagged trip, the trip becomes unflagged and the system no longer counts it as Flagged for Release, but as either Released or Release Failed.
- 
- Each of the linked counts provide access to the windows similar to the All Truckloads Summary, All LTLs Summary, All Parcels Summary, and All Continuous Moves Summary but filtered by the relevant context (auto-released, released, failed, and so on).
  - Selecting a row and then choosing the Details button opens the corresponding plan output window. For example, if you select the TLs row and then click Details, the All Truckloads Summary window opens.
  - The operation of the Find Release Candidates button is independent of any row selection. Choosing this button opens the Release Candidates window. The Release Candidates window displays the best release candidates, within the selected plan, categorized as follows.
    - Time critical truckload trips
    - Time critical less-than-truckload and parcel trips
    - High utilization truckload trips

## Release Process Conditions

The following apply to all trips and continuous moves in the release process.

1. You can release an entire transportation plan or release individual trips in the plan. The trips can be continuous moves or truckload, less-than-truckload, or parcel trips. You can release multiple trips in one action. See 'Accessing the Release Function on

the Planner Workbench, page 16-2 for more information.

You can initiate the release through the auto-release process or through a user led manual process as described in this chapter. See 'Defining Auto-Release Rules for Planned Trips, page 6-35 for more information on the automatic release process.

2. You cannot release trips that have a departure date before the current (system) date. The planning system considers such trips to be past.
3. In the case of an automatic release with Release as Routing Firm or Routing and Contents Firm selected, the following apply.

The following table shows the impact of trip status in Transportation Execution on release process from Transportation Planning.

<b>Trip Status in Transportation Planning System</b>	<b>Impact on Auto-Release from Transportation Planning to Transportation Execution</b>
Trip is Routing and Contents Firm	The planning system releases all the deliveries on this trip in Routing and Contents Firm status.
Trip is Routing and Contents Firm and has deliveries with delivery legs in more than one trip, that is, the trip has related trips	The planning system releases all the other trips (related trips) that contain deliveries common to the firmed trip in Routing Firm or Routing and Contents Firm status.
Trip is Routing and Contents Firm and is a continuous move or has related trips in continuous moves	The system releases the trips and the deliveries in the continuous move also, but not necessarily in a Firm status.

4. The following conditions apply when you firm and release trips from the transportation planning system to the transportation execution system. See 'Firming, page 9-1 for more information.

The following table shows the impact of trip status in Transportation Execution on release process from Transportation Planning.

<b>Trip Status in Transportation Execution</b>	<b>Impact on Release from Transportation Planning to Transportation Execution</b>
--	---

<b>Trip Status in Transportation Execution</b>	<b>Impact on Release from Transportation Planning to Transportation Execution</b>
Trip is Not Firm	The planning system does not pick up the trip from transportation execution, but may build an identical trip by itself. You can release this trip from Oracle Transportation Planning in the Not Firm, Routing Firm, or Routing and Contents Firm status.
Trip is Routing and Contents Firm	The planning system captures the trip from transportation execution and releases the trip back to transportation execution as Routing and Contents firm. You cannot change the firm status of such a trip in Oracle Transportation Planning. Related trips do not have any impact.
Trip is Routing Firm	The planning system cannot release an already Routing Firm trip as Not Firm, but can release this trip as Routing Firm or Routing and Contents Firm.

5. You can change trips in Oracle Transportation Planning after they are released to transportation execution. In this case, you can view the trip details for information such as Flagged for Release and Released (Date and Time). In addition, you can re-release the trips from the transportation planning system to the transportation execution system subject to the following conditions.

The following table shows the initial release status from planning system and possible re-release statuses.

<b>Initial Release Status from Planning System to Execution System</b>	<b>Possible Re-Release Statuses</b>
Trip is Not Firm	You can re-release this trip in the Not Firm, Routing Firm, or Routing and Contents Firm status.
Trip is Routing and Contents Firm	The planning system can only re-release this trip as Routing and Contents firm. To make any changes to this trip, you have to unfirm the trip in the transportation execution system. For the planning system to consider this trip again, the entire setup data must be re-snapshot (or the plan must be launched again). Alternatively, you can make changes required for this trip on the execution system.

Initial Release Status from Planning System to Execution System	Possible Re-Release Statuses
Trip is Routing Firm	The planning system can release this trip to transportation execution as Routing Firm or as Routing and Contents Firm.

6. When the release process runs, the system creates a log file to indicate the total number of continuous moves, truckload trips, less-than-truckload trips, and parcel trips released. The log file also records any errors encountered during the release of a trip. To access the log file, open the Requests window by selecting Requests from the View menu.
7. When you release a trip, the system automatically clears the Release flag of the trip. This enables you to make further modifications to the trip, if required, and to re-check the Release flag for subsequent re-release.
8. After successful release completion, the release process updates the firm status flag in the transportation execution system at the delivery and trip levels. The transportation execution system updates the following for every release from the planning system to the execution system.
  - Delivery line assignments to deliveries
  - Delivery assignments to trips (through stops and delivery legs)
  - Trip associations to continuous moves

**Note:** You define shipping parameters for all shipper organizations in the Shipping Parameters window of Oracle Shipping Execution. You can access the Shipping Parameters window using the Manufacturing and Distribution Manager responsibility.

On the Delivery tab in the Shipping Parameters window, you can specify delivery grouping attributes. These are organization-specific delivery grouping attributes.

Oracle Transportation Planning considers grouping of deliveries based only on the Ship From Location and Ship To Location. When Oracle Transportation Planning is installed, you should not specify delivery grouping attributes other than Ship From Location and Ship To Location. Defining delivery grouping attributes other than Ship From Location and Ship To Location will cause the release process to fail for any delivery



(and its related trips) planned in Oracle Transportation Planning that does not meet the delivery grouping attributes defined in Oracle Shipping Execution.

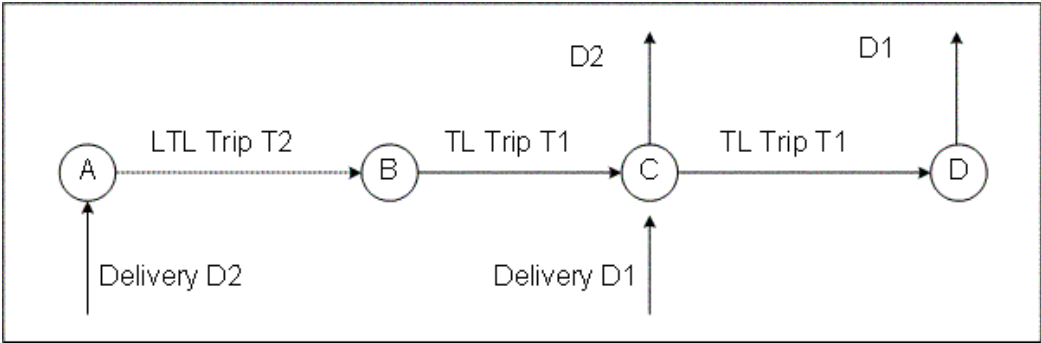
## Impacts of Firming on Releasing

This section illustrates the impact of firming on the release process. Whenever a trip is released from the planning system, the system checks for any related trips that also need to be released. Trips are related when they have one or more deliveries in common or are part of the same continuous move.

### Impact of Firming on Releasing Trips and Deliveries

Consider the following example to understand the impact of firming on releasing trips and deliveries.

**Example for Impact of Firming on Releasing Trips and Deliveries**



Delivery D2 travels from stop A to stop B by less-than-truckload trip T2 and from stop B to stop C by truckload trip T1. Also, at stop C, delivery D1 is loaded onto truckload trip T1. Truckload trip T1 carries delivery D1 to its destination point D.

Based on this example, the propagation effect of firming on releasing trips and deliveries is as follows:

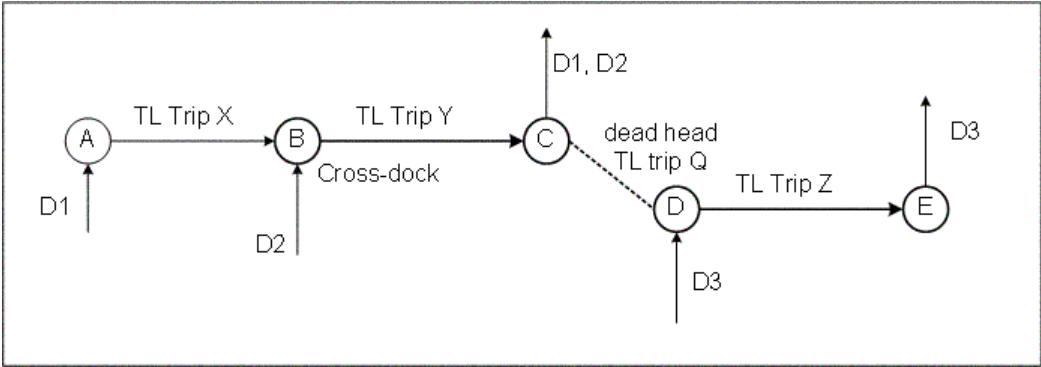
Release	Impact
---------	--------

Release	Impact
Release Trip T1 as Routing and Contents Firm	<ul style="list-style-type: none"> <li>• Release Delivery D1 as Routing and Contents Firm</li> <li>• Release Delivery D2 as Routing and Contents Firm</li> <li>• Release Trip T2 as Routing Firm</li> </ul>
Release Trip T2 as Routing and Contents Firm	<ul style="list-style-type: none"> <li>• Release Delivery D2 as Routing and Contents Firm</li> <li>• Release Trip T1 as Routing Firm</li> <li>• Release Delivery D1 as Not Firm</li> </ul>
Release Trip T1 as Not Firm	<ul style="list-style-type: none"> <li>• Release Delivery D1 as Not Firm</li> <li>• Release Delivery D2 as Not Firm</li> <li>• Release Trip T2 as Not Firm</li> </ul>
Release Trip T2 as Not Firm	<ul style="list-style-type: none"> <li>• Release Delivery D2 as Not Firm</li> <li>• Release Trip T1 as Not Firm</li> <li>• Release Delivery D1 as Not Firm</li> </ul>

### Firming and Releasing Continuous Moves

Consider the following example to understand the impact of firming and releasing trips in a continuous move. This example assumes that none of the trips or deliveries were firming before.

**Impact of Firming and Releasing Trips in a Continuous Move**



Delivery D1 travels from origin A to cross-docking facility B by truckload trip X. At B, D1 is cross-docked from Trip X to Trip Y and delivery D2 is loaded to trip Y. Trip Y carries deliveries D1 and D2 to stop C, which is the destination point for both deliveries. The truck travels from C to stop D (deadhead truckload trip Q) without any load. At stop D, the truck picks up delivery D3 and proceeds to stop E, which is the destination point for delivery D3. Trips Y, Q, and Z constitute a continuous move.

Based on this example, the propagation effect of firming and releasing trips in a continuous move is as follows.

Release	Impact
Release Trip X as Routing and Contents Firm	<ul style="list-style-type: none"><li>• Release Delivery D1 as Routing and Contents Firm</li><li>• Release Trip Y as Routing Firm</li><li>• Release Delivery D2 as Not Firm</li><li>• Release Trip Q and Trip Z as Not Firm</li><li>• Release Delivery D3 as Not Firm</li></ul>

Release	Impact
Release Trip X as Routing Firm  (This is the same as Trip Y or Trip Z being released as Routing Firm)	<ul style="list-style-type: none"> <li>• Release Delivery D1 as Not Firm</li> <li>• Release Trip Y as Not Firm</li> <li>• Release Delivery D2 as Not Firm</li> <li>• Release Trip Q and Trip Z as Not Firm</li> <li>• Release Delivery D3 as Not Firm</li> </ul>
Release Trip X as Not Firm  (This is the same as Trip Y or Trip Z being released as Not Firm)	<ul style="list-style-type: none"> <li>• Release Delivery D1 as Not Firm</li> <li>• Release Trip Y as Not Firm</li> <li>• Release Delivery D2 as Not Firm</li> <li>• Release Trip Q and Trip Z as Not Firm</li> <li>• Release Delivery D3 as Not Firm</li> </ul>
Release Trip Y as Routing and Contents Firm	<ul style="list-style-type: none"> <li>• Release Deliveries D1 and D2 as Routing and Contents Firm</li> <li>• Release Trip X as Routing Firm</li> <li>• Release Trip Q and Trip Z as Not Firm</li> <li>• Release Delivery D3 as Not Firm</li> </ul>
Release Trip Z as Routing and Contents Firm	<ul style="list-style-type: none"> <li>• Release Delivery D3 as Routing and Contents Firm</li> <li>• Release Trip Y and Trip Q as Not Firm</li> <li>• Release Delivery D2 as Not Firm</li> <li>• Release Delivery D1 as Not Firm</li> <li>• Release Trip X as Not Firm</li> </ul>

Release	Impact
Release Continuous Move Y-Q-Z as Firm	<ul style="list-style-type: none"> <li>• Release Trip Y, Trip Q, and Trip Z as Routing Firm</li> <li>• Release Deliveries D1, D2, and D3 as Not Firm</li> <li>• Release Trip X as Not Firm</li> </ul>
Release Continuous Move Y-Q-Z as Not Firm	<ul style="list-style-type: none"> <li>• Release Trip Y, Trip Q, and Trip Z as Not Firm</li> <li>• Release Deliveries D1, D2, and D3 as Not Firm</li> <li>• Release Trip X as Not Firm</li> </ul>

## Releasing Out-of-Scope Deliveries and Trips

The following sections discuss how the Oracle Transportation Planning engine releases deliveries and trips that are outside the specified plan scope.

### Out-of-Scope Deliveries

In certain circumstances, the planning engine may need to capture delivery lines that are outside the plan scope. See 'Specifying Plan Scope, page 6-5 for more information. The planning engine picks up all the delivery lines that overlap with the planning horizon and any firm delivery or vehicle trip associated with these delivery lines. Such a firm vehicle trip may carry other delivery lines that do not overlap with the planning horizon. Deliveries containing these out-of-scope delivery lines may also have delivery legs on other vehicle trips. This requires that the planning engine consider other firm delivery legs that constitute the deliveries of the out-of-scope delivery lines.

The vehicle trip that an out-of-scope delivery line is on always has a firm status of either Routing Firm or Routing and Contents Firm. The rules for changing the trip statuses are as explained in 'Out-of-Scope Deliveries, page 8-18. If this trip is Routing Firm, then you can add other deliveries to or remove deliveries that are Not Firm from this trip. You can do this only in a manner that does not violate the Routing Firm condition.

However, out-of-scope deliveries on the trip have a firm status of Out of Scope. You cannot unassign such a delivery from the current trip or re-assign it to another trip.

Note that the planning engine captures the firm status of the out-of-scope delivery even if the firm status is not displayed. This firm status is used in the release process as follows:

If the trip with the out-of-scope delivery line is released in a Routing Firm status, then

the out-of-scope delivery is released as Routing and Contents Firm if it had the Routing and Contents firm status when captured from the transportation execution system. If the out-of-scope delivery was Contents Firm when captured from the transportation execution system, the delivery is released as Contents Firm. If the out-of-scope delivery was Not Firm when captured from transportation execution, it is released as Not Firm.

You cannot release a trip having an out-of-scope delivery line in a Routing and Contents Firm status. This eliminates the propagation impact of the Firm status to all other vehicle trips on the execution system that this delivery line is on.

The validations for the release process from the transportation planning system to the transportation execution system are the same for deliveries in scope or out of scope.

## Out-of-Scope Trips

Consider a continuous move in a Firm status that exists on the transportation execution system. Suppose that the continuous move includes trips T1 and T2. When the planning system captures the delivery lines that overlap with the plan scope, it may be possible that all the delivery lines on trip T2 are within scope. Delivery lines on trip T1 may be outside the planning horizon. For the purpose of planning, the planning system picks up the stops, trip legs, and delivery lines on T1. However, since this trip is beyond the scope of planning, the trip has the Firm status of Out of Scope.

You cannot change the Firm status of an out-of-scope trip or make any manual edits to the trip. You cannot release an out-of-scope trip from the planning system. However, if you release the continuous move, then the process also releases the out-of-scope trips in the continuous move with the firm status that these trips had on the transportation execution system.

## Release Process Validations

The transportation execution system performs the following validations when the planning system releases planned trips. The transportation planning system generates log files for any errors encountered during the release process.

1. If Oracle Transportation Planning tries to release a trip to the transportation execution system as Not Firm or Routing Firm and the release process encounters the trip on transportation execution with a firm status of Routing and Contents Firm, then the release process fails for this trip and related trips.
2. If the planning system tries to release a vehicle trip to transportation execution and the release process encounters a trip with a status of Ignore for Planning in the transportation execution system, then the release process fails for this trip.
3. If the planning system tries to release a trip with its delivery lines as Not Firm and the release process encounters, in the transportation execution system, a delivery line on the vehicle trip with a firm status of Routing and Contents Firm, then the release process fails for the trip.

4. If the planning system tries to release a trip to the transportation execution system and the release process encounters a delivery line on the vehicle trip with an Ignore for Planning status in transportation execution, the release process fails for the trip and related trips.
5. From the time the planning system has snapshot the data to the time it releases the planning output back to the execution system, a number of changes can happen on a delivery line:
  - Increase in quantity
  - Decrease in quantity
  - Change in origin
  - Change in destination
  - Change in earliest or latest ship dates
  - Change in earliest or latest delivery dates
  - Planning status changed to Ignore for Planning

For details of how the transportation execution system handles the release of such delivery lines, see 'Release Process and the Transportation Execution System, page H-1.
6. When the planning system releases a continuous move, the release process fails for all the trips on the continuous move if it encounters an error on any one trip on the continuous move.
7. The transportation planning system always captures any delivery line without specified earliest and latest available to ship dates. The planning system considers these delivery lines to be overlapping with the plan horizon. In such cases, after the delivery line is planned on the planning system and the delivery containing this delivery line is released to the transportation execution system, the transportation execution system alerts you to firm this delivery as Routing and Contents Firm. This is to ensure that the delivery line will not be re-planned in further planning cycles.

**Note:** The concurrent request process for each release creates a log file which may be used to diagnose trips or continuous moves which fail to release. You can control the content of the log file using the profile option MST: Release Debug.

MST: Release Debug is a nine character string made of binary digits used to enable or disable various logging options for the release

process. Setting a digit in the profile to 1 enables the associated logging and setting the digit to 0 disables the logging. The logging options are:

- Log basic information
- Log information when writing to interface tables
- Log information when purging interface tables
- Log information when updating Oracle Transportation Planning tables
- Log information regarding flow of control
- Log information regarding release failure
- Log information regarding release success
- Log information when purging temporary tables
- Log information regarding summary statistics

A profile option setting of 111111111 enables all nine types of logging content. The seeded default value for this profile option is 011101011.

Additional diagnostic information may be obtained with the following profile option settings for Oracle Shipping Execution:

- WSH: Debug Enabled: Yes
- WSH: Debug Level: Statement
- WSH: Debug Module: wsh.plsql.wsh\_tp\_release\_int%



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## Map and Time Zone Data Setup

This appendix covers the following topics:

- Step 1: Install Oracle Spatial
- Step 2: Obtain Map Data
- Step 3: Load Spatial Data into Oracle Spatial
- Step 4: Install MapViewer on Middle Tier
- Step 5: Load MapViewer Setup Data
- Step 6: Set up Profile Options Related to Map

### Step 1: Install Oracle Spatial

Oracle Spatial is available in Oracle Enterprise Edition 8i and later versions.

Check if the Oracle Spatial installation is installed and whether it contains any invalid objects. Note that the version of the spatial installation must be the same as the RDBMS version number (first three digits).

To check the version numbers of the RDBMS and Spatial installation, use the following SQL statements:

```
select sdo_admin.sdo_version from dual;
```

and

```
select * from v$version;
```

If the version number of the spatial installation does not correspond with the version of the first three version digits of the RDBMS; for example, 8.1.6, you must re-install the MDSYS user or Spatial. Refer to the Spatial installation documentation on Oracle *MetaLink* to obtain the procedure for installation. Then check the MDSYS (Spatial) user for correct installation using the following SQL statement.

```
select count(*) from all_objects
```

```
where status='INVALID' and owner='MDSYS';
```

If invalid objects are reported, try to re-compile them. If, after compilation, invalid objects are still reported, you must re-install the Spatial option.

## Step 2: Obtain Map Data

To obtain geographic data, it is recommended that you use NAVTEQ for North America and Western Europe. For other geographies, use geographic information that local vendors provide.

The name of the NAVTEQ product you can use is **US Data Designed and Licensed To Work With Oracle's Transportation Planning Product**. The product number is **C4P6907**. To order the NAVTEQ data CD for Oracle Transportation Planning, call NAVTEQ at 1-888-NAVMAPS ((619) 291-0126) and ask for Product Number C4P6907.

## Step 3: Load Spatial Data into Oracle Spatial

Bulk load spatial data into the Oracle database. To bulk load, use the SQL\*Loader utility. You can directly load data in text format to the SDO\_GEOMETRY object using SQL Loader. Note that Oracle 8.1.7 or later versions is required to support the spatial data type SDO\_GEOMETRY.

The following spatial data must be loaded into Oracle Spatial. The information is stored in corresponding data tables as indicated.

- Administrative boundaries for the geography:  
MST\_MD\_ADMIN\_BOUNDARIES.DAT
- Names of the regions within the administrative boundaries:  
MST\_MD\_NAMES.DAT
- Water profile around the geography: MST\_MD\_HYDROS.DAT
- Latitude, longitude, and time zone: WSH\_LOCATION\_DATA\_EXT.DAT

The following script is an example script for loading the data.

```
sqlldr apps/apps65@apstdv11i WSH_LOCATION_DATA_EXT.dat
```

To check whether any data has been loaded, use the following SQL statement.

```
select count(*) from mst_md_names;
```

## Step 4: Install MapViewer on Middle Tier

Before installing Map Viewer on the middle tier, note that Oracle 9iAS MapViewer

requires JDK 1.2 or above, preferably JDK 1.3; Oracle JDBC drivers 8.1.7.x.x or above, preferably 8.1.7.2.0 or above; and xmlparserv2.jar.

To test if the MapViewer is running properly, you can use a test URL similar to:

`http://<hostname.us.oracle.com>:<port>/servlet/oms/`

If a map server is alive on the given host and port, the response must appear similar to:  
[omslauncher] responding...

<map server> is registered as mapserver

To check whether the MapViewer is installed, verify the existence of the following files in the iAS directory. The file jserv.properties must be similar to:

```
# Oracle Spatial SDOAPI
```

```
wrapper.classpath=/u08/oracle/fsdemo/ora/iAS/mapviewer/lib/sdoapi101.jar
```

```
# Oracle Spatial Visualizer
```

```
wrapper.classpath=/u08/oracle/fsdemo/ora/iAS/mapviewer/lib/sdovis.jar
```

```
# Oracle Spatial MapServer
```

```
wrapper.classpath=/u08/oracle/fsdemo/ora/iAS/mapviewer/lib/mapviewer118.jar
```

The file zone.properties must be similar to:

```
servlets.startup=oms
```

```
servlet.oms.code=oracle.spatial.mapserver.omslauncher
```

```
servlet.oms.initArgs=remote_name=mapviewer,oms_config_file=/u08/oracle/fsdemo/ora/iAS/Apache/mapviewer/conf/mapViewerConfig.xml,registry_port=1099
```

Note that the jserv.properties file requires an entry for the root servlet zone. This is a pair of entries and appears similar to:

```
zones=root, oraclejsp
```

```
root.properties=/u08/oracle/fsdemo/ora/iAS/Apache/Jserv/etc/zone.properties
```

Without this entry, the map server will not start.

## Step 5: Load MapViewer Setup Data

The system stores the mapping metadata describing base maps, themes, and styles in the following global tables:

- Base Maps: SDO\_MAPS\_TABLE
- Themes: SDO\_THEMES\_TABLE
- Styles: SDO\_STYLES\_TABLE

These tables are owned by MDSYS. You should never directly update these tables. Each MapViewer user has the following views available in the schema associated with that user.

- USER\_SDO\_MAPS and ALL\_SDO\_MAPS contain information about maps.
- USER\_SDO\_THEMES and ALL\_SDO\_THEMES contain information about themes.
- USER\_SDO\_STYLES and ALL\_SDO\_STYLES contain information about styles.

The following three files are used to populate the map metadata for MapViewer. You must use MST as the user id to load these files.

- +USER\_SDO\_STYLES.exp (referring DEFINITION.clb, dummy.gif)
- +USER\_SDO\_THEMES.exp (referring MST\_ADMIN\_BOUNDS.clb)
- +USER\_SDO\_MAPS.exp (referring MSTMAP1.clb)

The following is a sample sqlldr script.

```
sqlldr mst/mst65@apstdv11i USER_SDO_STYLES.exp
```

### USER\_SDO\_STYLES.exp

```
LOAD DATA

INFILE *

REPLACE

CONTINUEIF NEXT(1:1) = '#'

INTO TABLE USER_SDO_STYLES

FIELDS TERMINATED BY "|" OPTIONALLY ENCLOSED BY '^'
```

```

TRAILING NULLCOLS

(

NAME,

TYPE,

DESCRIPTION,

ext_fname4 FILLER CHAR(40),

"DEFINITION" LOBFILE(ext_fname4) TERMINATED BY EOF,

ext_fname5 FILLER CHAR(40),

"IMAGE" LOBFILE(ext_fname5) TERMINATED BY EOF,

GEOMETRY COLUMN OBJECT

(

SDO_GTYPE      INTEGER EXTERNAL,

SDO_POINT COLUMN OBJECT

(X              FLOAT EXTERNAL,

Y              FLOAT EXTERNAL),

SDO_ELEM_INFO VARRAY TERMINATED BY '||/'

(X              FLOAT EXTERNAL),

SDO_ORDINATES VARRAY TERMINATED BY '||/'

(Y              FLOAT EXTERNAL)

)

)

BEGINDATA

^MST_ADMIN_AREAS^|^COLOR^||DEFINITION1.clb|dummy.gif|

```

#### **USER\_SDO\_THEMES.exp**

```
LOAD DATA

INFILE *

REPLACE

INTO TABLE USER_SDO_THEMES

FIELDS TERMINATED BY "|" OPTIONALLY ENCLOSED BY '^'

TRAILING NULLCOLS

(

NAME,

DESCRIPTION,

BASE_TABLE,

GEOMETRY_COLUMN,

ext_fname5 FILLER CHAR(40),

"STYLING_RULES" LOBFILE(ext_fname5) TERMINATED BY EOF

)

BEGINDATA

^MST_MD_ADMIN_BOUNDS^||^MST_MD_ADMIN_BOUNDARIES^|^GEOMETRY^|MST_ADMIN_BO
UNDS.clb
```

#### **USER\_SDO\_MAPS.exp**

```
LOAD DATA

INFILE *

REPLACE

INTO TABLE USER_SDO_MAPS

FIELDS TERMINATED BY "|" OPTIONALLY ENCLOSED BY '^'
```

```

TRAILING NULLCOLS

(

NAME,

DESCRIPTION,

ext_fname3 FILLER CHAR(40),

"DEFINITION" LOBFILE(ext_fname3) TERMINATED BY EOF

)

BEGINDATA

^MSTMAP^| |MSTMAP1.c1b

```

## Step 6: Set up Profile Options Related to Map

To check map-related profile option settings:

1. Switch to the System Administrator responsibility.
2. Navigate to the Find System Profile window using the path: Profile > System.
3. Check Site.
4. Enter MST: Map% in the Profile field.
5. Click Find.

All the map-related profile options are seeded with default values. The following table describes the profile options.

User Profile Name	Description
MST: Map JDBC driver type	The JDBC driver type used to make a connection to the data source for the map with default set to 'thin'
MST: Map RMI binding name	The Remote Method Invocation binding name that is used for the map server

User Profile Name	Description
MST: Map RMI host name	The Remote Method Invocation hostname that is used for the map server, typically the name of the machine where the map server is running
MST: Map RMI port number	<p>The Remote Method Invocation port number that is used for the map server</p> <p>The default is 1099. Check in jserv.properties or zone.properties file of the iAS installation for your setup.</p>
MST: Map basemap name	The basemap name for the map as found in the data source maps table
MST: Map data source name	<p>The unique name that is given to the collection of data source parameters for the map; for example, MSTMAP</p> <p>You must modify the name if any of the data source profile options change and the map server cannot be restarted.</p>
MST: Map database SID	The database SID of the data source for the map, typically the same as the SID of the database server
MST: Map enable java debugging	Optionally enable additional debugging output to the Java console for the map.
MST: Map high latitude coordinates	Indicate the high latitude coordinates of the minimum bounding rectangle of the default map.
MST: Map high longitude coordinates	Indicate the high longitude coordinates of the minimum bounding rectangle of the default map.
MST: Map host name	The name of the host of the data source for the map, typically the same as the database server machine name
MST: Map icon URL	<p>The URL of the directory where the image files are stored for the map markers</p> <p>The images are used to show facilities on the Map in the Oracle Transportation Planning Planner Workbench. For example: <a href="http://hostname/OA_MEDIA">http://hostname/OA_MEDIA</a></p>



User Profile Name	Description
MST: Map table name	The name of the maps table in the data source for the map
MST: Map low latitude coordinates	Indicate the low latitude coordinates of the minimum bounding rectangle of the default map.
MST: Map low longitude coordinates	Indicate the low longitude coordinates of the minimum bounding rectangle of the default map.
MST: Map move factor (between 0.1 and 1)	<p>The fraction of the width or height by which the map view should be moved when using the navigate buttons on the Map tab in the Oracle Transportation Planning Planner Workbench</p> <p>The default value is 0.85.</p>
MST: Map port number	The listener port number for the data source for the map, typically the same as the database server listener port number
MST: Map styles table	The name of the styles table in the data source for the map
MST: Map themes table	The name of the themes table in the data source for the map
MST: Map user identification	Indicate your user id and password
MST: Mappers count	The highest number of parallel map requests that are required to be serviced at one time for the map



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## Facility Auto-Creation Template

This appendix covers the following topics:

- Facility Auto-Creation Template

### Facility Auto-Creation Template

Oracle Transportation Planning requires facility information such as latitude and longitude; processing times; consolidation and deconsolidation activities allowed; and number of docks. Facility information is set up in Oracle Transportation Execution. You can use the Facility Auto-Creation routine to automatically create facilities for new and existing customer sites, supplier sites, carrier sites, and shipper organizations.

The system triggers the Facility Auto-Creation routine in either of the following situations.

- You create a new wsh\_location by entering a new customer site, carrier site, or a shipping organization.
- The system identifies a delivery line in the transportation execution system that does not have an existing entry in wsh\_locations for its Ship-From or Ship-To location. This typically happens due to the creation of an inbound delivery line from a purchase order line.

The following default template is used to populate a facility record when the system automatically creates it.

Tab	Header	Field	Default Population
Create Facility	--	Facility Code	First 30 characters of the facility description

Tab	Header	Field	Default Population
Create Facility	--	Facility Description	<p>For a supplier, carrier, or customer, this is the concatenation of company name and site. For example, if a carrier is ABC and one of its facilities is ABC100, the description will be ABC_ABC100.</p> <p>For an internal organization, this would be the my company name followed by the organization code (the "my company" name is defined in a profile option). For example, if the host company is XYZ and one of its organizations is Clearlake_333, then the description would be XYZ_Clearlake333.</p> <p>If multiple companies or multiple sites are associated with the same location, then the information for the company and site that were created the earliest is used.</p>
Create Facility	--	Effective Start Date	Blank
Create Facility	--	Effective End Date	Blank
Create Facility	--	Company Type	Customer, Supplier, Shipper, or Carrier as appropriate
Create Facility	--	Company Name	<p>Company Name (Customer, Supplier, Shipper, or Carrier, as appropriate).</p> <p>If multiple companies are associated with the same location, then the name of the company whose site was created the earliest is used.</p>
Create Facility	--	Address	Address of wsh_location
Create Facility	--	Longitude	Call Subroutine for populating Longitude
Create Facility	--	Latitude	Call Subroutine for populating Latitude

Tab	Header	Field	Default Population
Create Facility	--	Geometry	Call Subroutine for populating spatial coordinates
Create Facility	--	Contact Person	As defined for customer, carrier, supplier, or shipper
Create Facility	--	Contact Number	As defined for customer, carrier, supplier, or shipper
Create Facility	--	Calendar	Blank. Oracle Transportation Planning considers the facility to be open 24 hours a day and 7 days a week.
Consolidation	Consolidation Allowed	--	Unchecked
Consolidation	Deconsolidation Allowed	--	Unchecked
Consolidation	Cross Docking Allowed	--	Unchecked
Consolidation	Movements Reserved for Carrier	Line, Local, Either, Both, Neither	Neither
Processing	Handling Capacity	Capacity	Blank (treated as unlimited)
Processing	Handling Capacity	Unit of Handling: Shipment, Pallet, Weight (kilogram, pound, ton etc.), Volume (m <sup>3</sup> , ft <sup>3</sup> , etc.)	Blank (treated as unlimited)
Processing	Handling Capacity	Unit of Time (minutes, hours, days, etc.)	Blank (treated as unlimited)

<b>Tab</b>	<b>Header</b>	<b>Field</b>	<b>Default Population</b>
Processing	Processing Time	Flow Through Time	0
Processing	Processing Time	Unit of Time (minutes, hours, days, etc.)	Blank (treated as unlimited)
Processing	Processing Rates	Loading rate for palletized shipments	From Oracle Transportation Planning Global Preferences
Processing	Processing Rates	Unloading rate for palletized shipments	From Oracle Transportation Planning Global Preferences
Processing	Processing Rates	Unit of Handling - Piece, Pallet, Weight (kilogram, pound, etc.), Volume (m <sup>3</sup> ft <sup>3</sup> , etc.)	From Oracle Transportation Planning Global Preferences
Processing	Processing Rates	Time (minutes, hours, days, etc.)	Hour
Processing	Processing Rates	Loading rate for non-palletized shipments	From Oracle Transportation Planning Global Preferences
Processing	Processing Rates	Unloading rate for non-palletized shipments	From Oracle Transportation Planning Global Preferences

Tab	Header	Field	Default Population
Processing	Processing Rates	Unit of Handling - Piece, Pallet, Weight (kilogram, pound, etc.), Volume (m <sup>3</sup> , ft <sup>3</sup> , etc.)	From Oracle Transportation Planning Global Preferences
Processing	Processing Rates	Unit of Time (minutes, hours, days, etc.)	Hour
Processing	Processing Rates	Handle Stacked Pallets	Checked
Vehicle Requirements	Maximum Allowed Vehicle Dimension	Dimension Unit of Measure (feet, inches, meters, etc.)	Blank (treated as unlimited)
Vehicle Requirements	Maximum Allowed Vehicle Dimension	Height	Blank (treated as unlimited)
Vehicle Requirements	Maximum Allowed Vehicle Dimension	Width	Blank (treated as unlimited)
Vehicle Requirements	Maximum Allowed Vehicle Dimension	Length	Blank (treated as unlimited)
Vehicle Requirements	Carrier Drop Trailer	--	Blank (treated as unlimited)

Tab	Header	Field	Default Population
General	--	Standard Time Zone Short Code	Call Subroutine for populating Time Zone
General	--	Standard Time Zone Long Name	Call Subroutine for populating Time Zone
General	--	Summer Time Zone Short Code	Call Subroutine for populating Time Zone
General	--	Summer Time Zone Long Name	Call Subroutine for populating Time Zone
Charges	Currency	Currency Unit of Measure (USD, EUR, INR, GBP, etc.)	Blank
Charges	Loading	Minimum Charge	0
Charges	Loading	Flat fee per stop	0
Charges	Loading	Per unit weight charge	0
Charges	Loading	Per package charge	0
Charges	Unloading	Minimum Charge	0
Charges	Unloading	Flat fee per stop	0
Charges	Unloading	Per unit weight charge	0



<b>Tab</b>	<b>Header</b>	<b>Field</b>	<b>Default Population</b>
Charges	Unloading	Per package charge	0
Charges	Assisted Loading	Minimum Charge	0
Charges	Assisted Loading	Flat fee per stop	0
Charges	Assisted Loading	Per unit weight charge	0
Charges	Assisted Loading	Per package charge	0
Charges	Assisted Unloading	Minimum Charge	0
Charges	Assisted Unloading	Flat fee per stop	0
Charges	Assisted Unloading	Per unit weight charge	0
Charges	Assisted Unloading	Per package charge	0
Charges	Handling	Minimum Charge	0
Charges	Handling	Flat fee per stop	0
Charges	Handling	Per unit weight charge	0
Charges	Handling	Per package charge	0



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## Examples of Layover Charge Consideration

This appendix covers the following topics:

- Layover Charges
- Weekday Layover Charges
- Weekend Layover Charges

### Layover Charges

Layover time is the time a driver spends not working while away from home terminal before completing the driver's current assignment. Layovers are typically required due to legal regulations that limit daily driving time. Layovers enforced legally do not incur charges while layovers caused due to other factors do incur charges. Examples in this appendix illustrate scenarios where layover charges are incurred.

Layover charges are of two types:

- **Weekday layover charges:** Weekday layover charges apply if the physical arrival time of the truck at a facility plus the unloading or loading time required at that facility is within the carrier's business hours but for other reasons, the truck has to wait until the next day or later for delivery to occur.
- **Weekend layover charges:** Weekend layover charges apply if the trip schedule includes a weekend. In Oracle Transportation Planning, the weekend is defined as Saturday and Sunday. In general, a shipper incurs a weekend layover charge if a truck's physical arrival time at a facility plus the unloading or loading time required at the facility falls after the carrier's general business hours on Friday and before general business hours on Monday, but the planned arrival time is during general business hours on Monday or later.

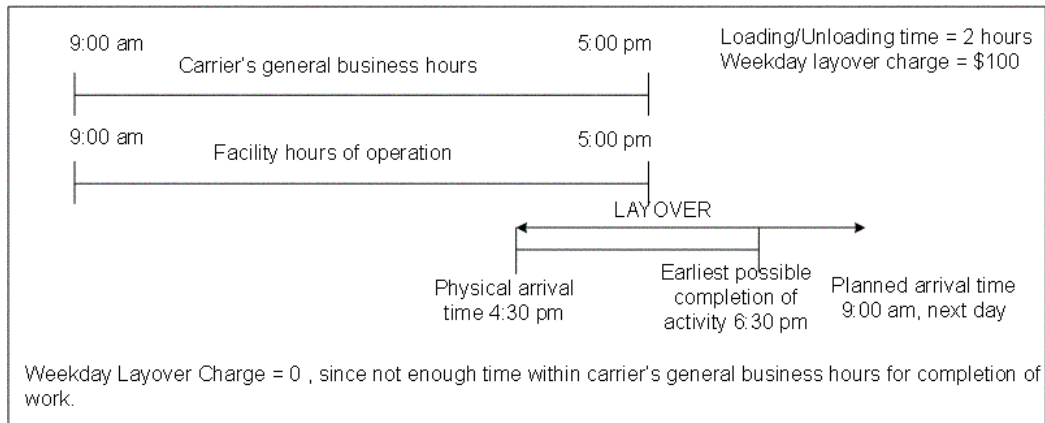
A carrier's general business hours refer to days and times during which the carrier expects businesses to be open for operations. For example, 9:00 a.m. to 5:00 p.m., Monday through Friday. You can specify calendars that are applicable to a carrier facility on the Workday Calendar window in Oracle Shipping Execution. See 'Define

Calendars, page 4-16 for more information.

## Weekday Layover Charges

The following examples illustrate the concept of weekday layover charges with respect to carrier's general business hours, facility hours of operation, and standing appointments between facilities and carriers.

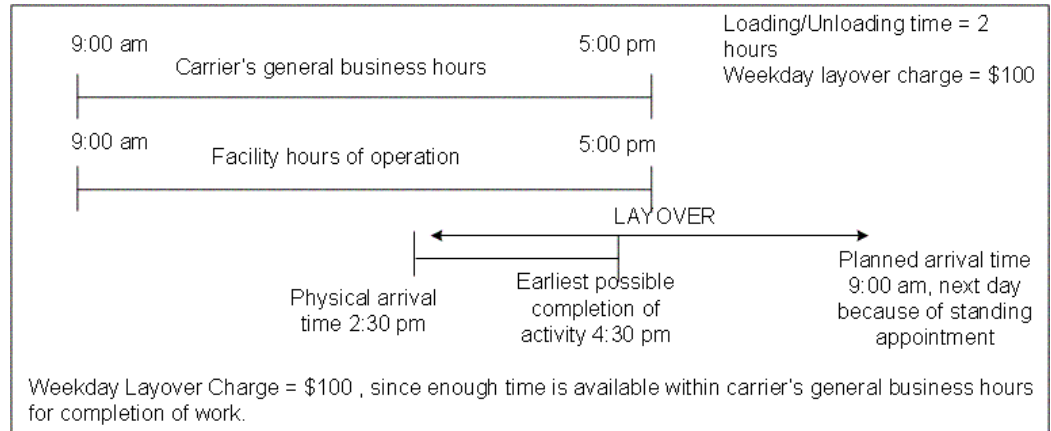
### Scenario 1



In scenario 1, the carrier's general business hours are from 9:00 a.m. to 5:00 p.m. and the destination facility's hours of operation are from 9:00 a.m. to 5:00 p.m. The estimated loading and unloading time at the facility is 2 hours and the weekday layover charge is specified as \$100.

The truck's physical arrival time at the facility is 4:30 p.m. on Monday while the planned arrival time, that is, the time at which Oracle Transportation Planning schedules the trip to arrive at the facility, is 9:00 a.m. on Tuesday. Physical arrival at 4:30 p.m. leaves only 0.5 hours within the carrier's general business hours to complete the work, while 2 hours of activity is required. In such a case, no weekday layover charge is incurred because not enough hours are available within the carrier's general business hours to complete the loading and unloading of the delivery.

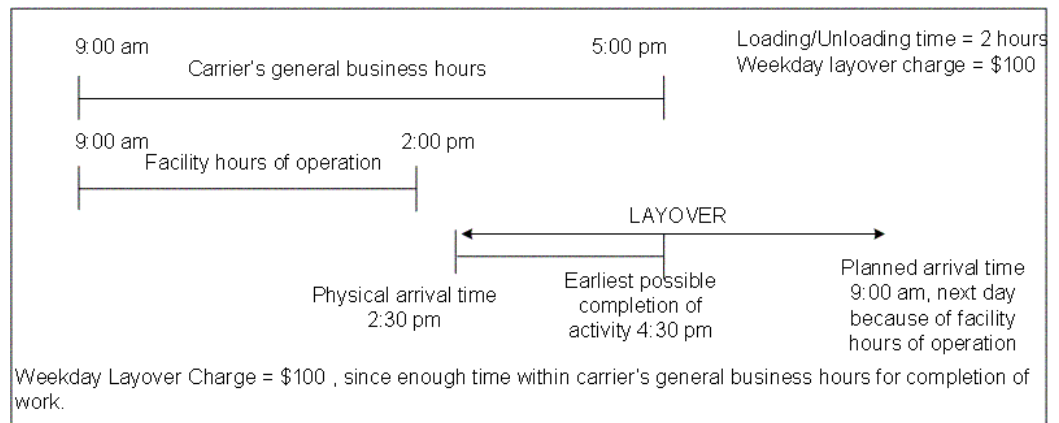
## Scenario 2



In scenario 2, the carrier's general business hours are from 9:00 a.m. to 5:00 p.m. and the destination facility's hours of operation are from 9:00 a.m. to 5:00 p.m. The estimated loading and unloading time at the facility is 2 hours and the weekday layover charge is set at \$100.

If the physical arrival time of the truck at the facility is 2:30 p.m. on Monday and the planned arrival time is 9:00 a.m. on Tuesday, then a weekday layover charge of \$100 is incurred. This is because the physical arrival of the carrier at 2:30 p.m. allows the completion of loading and unloading activity, which requires 2 hours, by 4:30 p.m., which is within the carrier's general business hours. This type of scenario may occur, for example, when an incoming truck's processing is deferred until a standing appointment the next day.

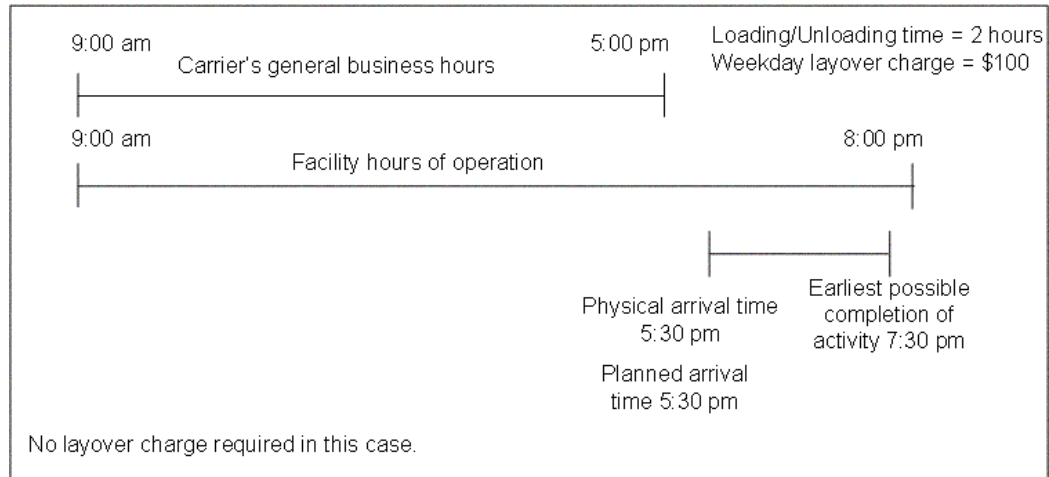
## Scenario 3



In scenario 3, the carrier's general business hours are from 9:00 a.m. to 5:00 p.m. and the destination facility's hours of operation are from 9:00 a.m. to 2:00 p.m. The estimated loading and unloading time at the facility is 2 hours and the weekday layover charge is set at \$100.

The truck's physical arrival time at the facility is outside the facility's hours of operation, which ends at 2:30 p.m. This arrival time still allows the completion of loading and unloading activity within the carrier's general business hours since the activity can be completed at the earliest by 4:30 p.m. But, since the planned arrival time at 9:00 a.m. Tuesday involves an overnight delay, a weekday layover charge of \$100 is incurred.

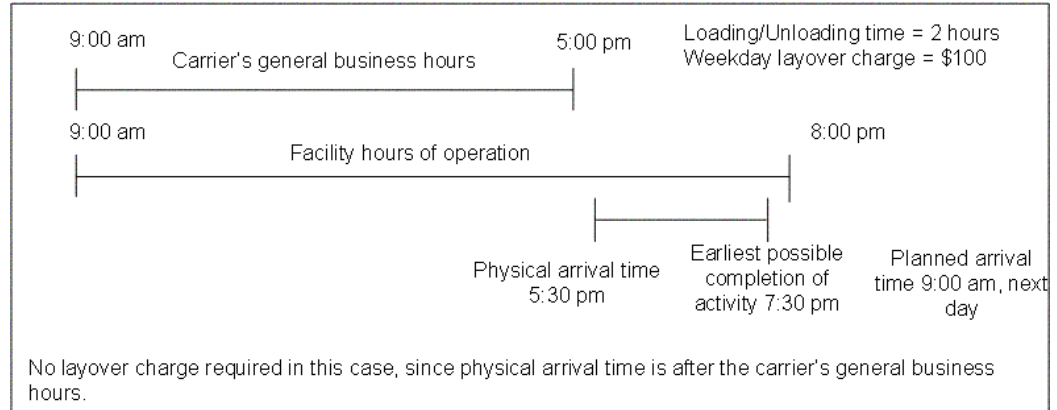
#### Scenario 4



In scenario 4, the carrier's general business hours are from 9:00 a.m. to 5:00 p.m. and the destination facility's hours of operation are from 9:00 a.m. to 8:00 p.m. The estimated loading or unloading time at the facility is 2 hours and the weekday layover charge is set at \$100.

If the truck's physical arrival time at the facility and the truck's planned arrival time are both 5:30 p.m., the loading and unloading activity can be completed by 7:30 p.m. within the facility's hours of operation. In this case, no layover charge is incurred because the carrier arrives at the facility after its general business hours. The handling of the trip occurs after those hours only because of the late arrival, not because of a delay from an earlier arrival.

## Scenario 5



In scenario 5, the carrier's general business hours are from 9:00 a.m. to 5:00 p.m. and the destination facility's hours of operation are from 9:00 a.m. to 8:00 p.m. The estimated loading and unloading time at the facility is 2 hours and the weekday layover charge is set at \$100.

If the truck physically arrives at the facility at 5:30 p.m. on Monday, but the planned arrival time of the truck at the facility is 9:00 a.m., Tuesday, no layover charges are incurred. This is because the truck's physical arrival at the facility occurs after the carrier's general business hours.

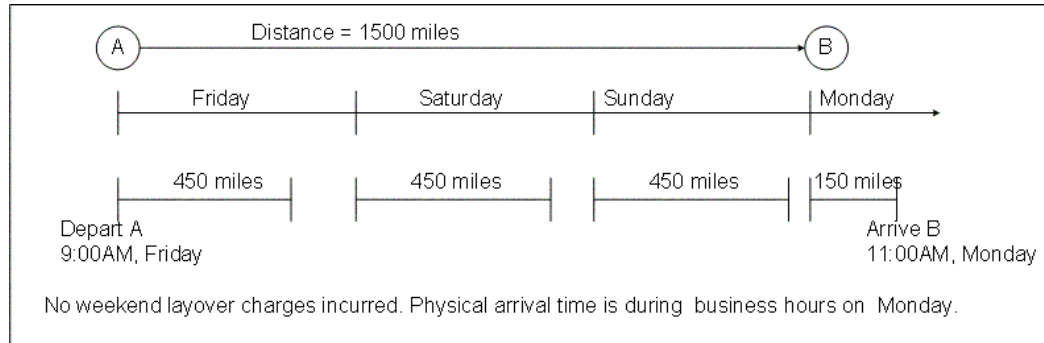
## Weekend Layover Charges

The following examples illustrate the concept of weekend layover charges with respect to carrier's general business hours, facility hours of operation, and standing appointments between facilities and carriers.

For the following example scenarios, consider the following layover charges. Note that you can define weekend layover charges with distance breaks.

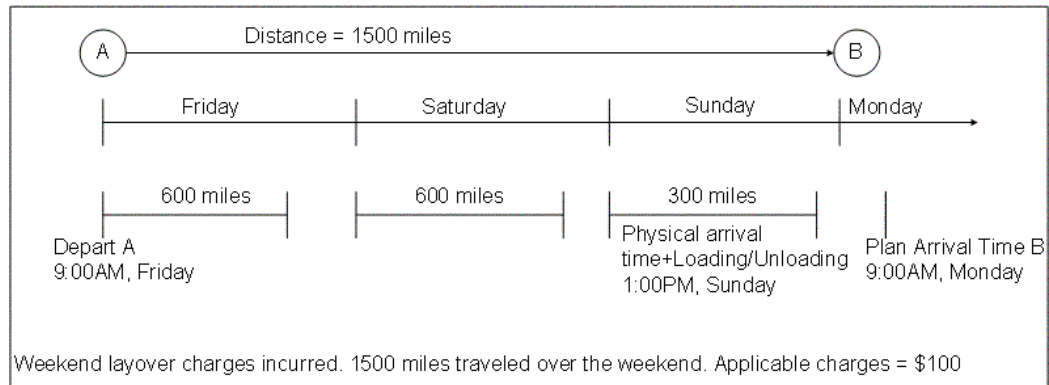
- For weekend layover charges:
  - Over 1500 miles: \$0
  - 1201-1500 miles: \$100
  - 1001-1200 miles: \$200
  - 501-1000 miles: \$400
  - 0-500 miles: \$600
- Weekday layover charge = \$100

## Scenario 1



Consider a truckload move from origin A to destination B. The distance from A to B is 1500 miles. The departure time from A is 9:00 a.m., Friday and the arrival time of truck at destination B is at 11:00 a.m., Monday. No weekend layover charges are incurred by the shipper in this scenario because physical and planned arrival time is during business hours on Monday.

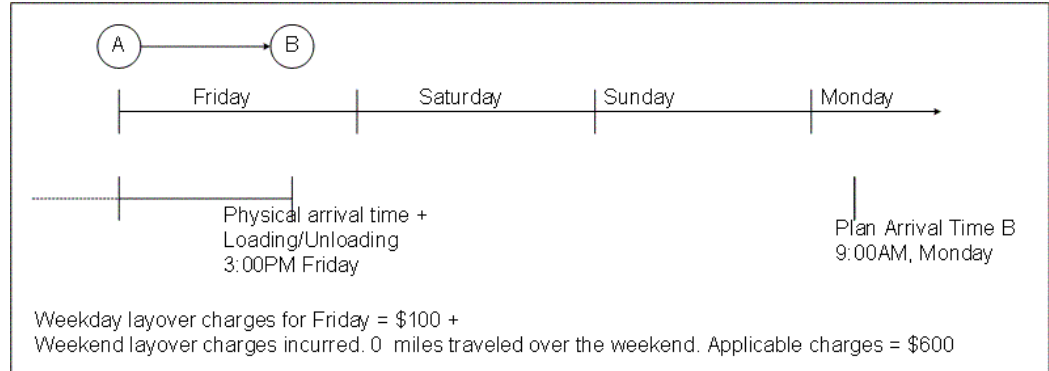
## Scenario 2



Suppose that a truck departs from origin A at 9:00 a.m., Friday and has time to arrive at destination B complete loading and unloading activity by 1:00 p.m., Sunday. If the planned arrival time at B is 9:00 a.m., Monday, the shipper incurs a weekend layover charge of \$100 corresponding to the distance break of 1500 miles traveled during the weekend.



### Scenario 3

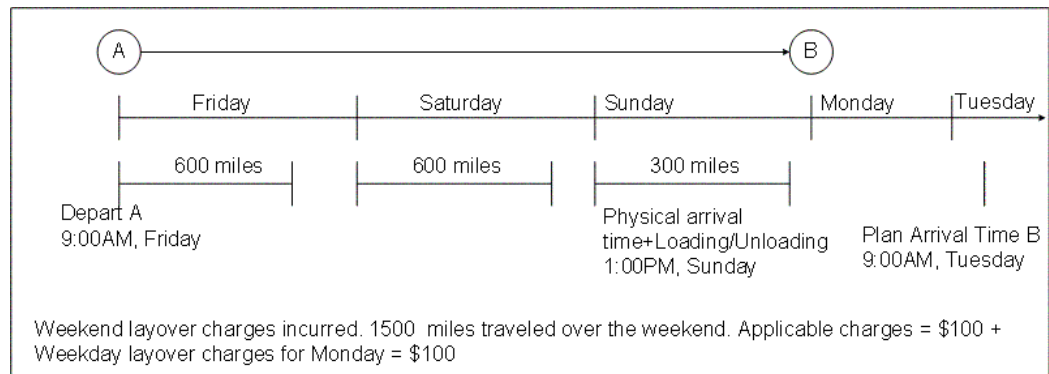


Suppose that a truck's physical arrival time at destination B plus the time required for completion of loading and unloading activity is 3:00 p.m. on Friday. If the planned arrival time at B is 9:00 a.m., Monday, the shipper incurs the following layover charges:

- Weekday layover charges for Friday = \$100
- Weekend layover charges corresponding to distance break 0 miles traveled during the weekend = \$600

Total layover charges = \$700

### Scenario 4



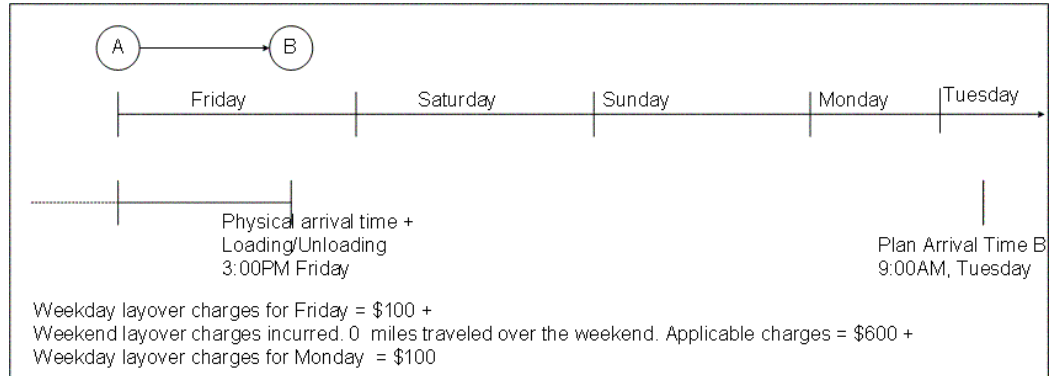
Suppose that a truck departs from A at 9:00 a.m. Friday, and arrives at destination B and can complete loading and unloading activity by 1:00 p.m. Sunday. If the planned arrival time is 9:00 a.m., Tuesday, then the layover charges incurred by the shipper is as follows:

- Weekend layover charges corresponding to 1500 miles traveled over the weekend = \$100
- Weekday layover charges for Monday since planned arrival time is on Tuesday =

\$100

Total layover charges = \$200

#### Scenario 5



Suppose that a truck leaves origin A and can physically arrive at destination B and complete loading and unloading activity by 3:00 p.m., Friday. If the planned arrival time at destination facility B is 9:00 a.m., Tuesday, the shipper incurs the following layover charges:

- Weekday layover charges for Friday = \$100
- Weekend layover charges corresponding to 0 miles traveled during the weekend = \$600
- Weekday layover charges for Monday = \$100

Total layover charges incurred = \$800

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# Shipping and Delivery Time Windows for Delivery Lines

This appendix covers the following topics:

- Shipping and Delivery Time Windows for Delivery Lines

## Shipping and Delivery Time Windows for Delivery Lines

You can specify the plan time horizon for the transportation plan by specifying the Plan Start and Plan End Dates. The transportation planning system considers all delivery lines that are available to ship in this time range. The time between the earliest available to ship date and the latest ship date of a delivery line indicates its available to ship window.

The following sections describe how the early and late ship and deliver dates for a delivery line are derived from source systems, such as Oracle Order Management, Oracle Purchasing, and Oracle Project Contracts.

### Ship Windows and Delivery Windows for Delivery Lines from Oracle Order Management

In Oracle Order Management, available to ship and delivery dates are populated as follows.

Each sales order line has a Request Date (RD), Earliest Acceptable Date (EAD), Latest Acceptable Date (LAD), Scheduled Ship Date (SSD), Scheduled Arrival Date (SAD), Promise Date (PD), and Early Shipment Date (ESD) also known as demand satisfaction date. Scheduled Ship Date (SSD) and Scheduled Arrival Date (SAD) are populated on the basis of an ATP check. Early Shipment Date represents the date on which the material is available to ship and is updated by subsequent Advanced Supply Chain Planning runs after order creation.

When you book an order, you can choose the Arrival or Ship date type on the order. If the customer chooses the Arrival date type, it indicates that the request date is the date by which the customer wants the order to arrive. If the date type is Ship, it indicates that the request date is the date by which the order must ship.

## Ship Windows and Delivery Windows for Delivery Lines from Oracle Order Management, Date Type: Ship

### Earliest Ship Date for a Delivery Line with Date Type Ship

For a delivery line originating from Oracle Order Management and belonging to an order with date type Ship, Oracle Transportation Planning obtains the Earliest Ship Date as follows.

- For a delivery line of an ATP item, the Earliest Ship Date is based on the value you specify for the **profile option OM: Source for TP Early Ship/Deliver Date**.
  - If the value you specify for the profile option is Earliest Acceptable Date, then Earliest Ship Date is the later of the Early Shipment Date and the Earliest Acceptable Date.

If the Earliest Acceptable Date is not specified, the Earliest Ship Date is the same as the Early Shipment Date. If the Earliest Ship Date is derived from the Early Shipment Date, the time is set to 00:01 in the local time of the ship-from facility. Note that Oracle Advanced Supply Chain Planning defaults the time to 23:59 in the Early Shipment Date but, in Oracle Transportation Planning, this time is set to 00:01 to maximize the time available for shipping on that day. If the Earliest Shipment Date is derived from the Earliest Acceptable Date and the time portion of the Earliest Acceptable Date is any time other than 00:00 or 23:59, the time for Earliest Ship Date is that from Earliest Acceptable Date. If the time in Earliest Acceptable Date is 00:00 or 23:59, the Earliest Ship Date time is set to 00:01 in the local time of the ship-from facility.

- If the value you specify for the profile option is Latest Ship Date, the Earliest Ship Date is the later of the Early Shipment Date and Latest Ship Date.

The time portion of the Earliest Ship Date field is set to 00:01 in the local time of the ship-from facility.

- For a delivery line of a non-ATP item, the Earliest Ship Date is calculated as follows:
  - If the value you specify for the **profile option OM: Source for TP Early Ship/Deliver Date** is Earliest Acceptable Date, the Earliest Ship Date is the same as the Earliest Acceptable Date.

If the time portion of the Earliest Acceptable Date is any time other than 00:00 or 23:59, the time for Earliest Ship Date is that from Earliest Acceptable Date. If the time in Earliest Acceptable Date is 00:00 or 23:59, the Earliest Ship Date time is set to 00:01 in the local time of the ship-from facility. If the Earliest Acceptable Date is not specified, it implies that no early limit exists. This delivery line can be shipped anytime on or before the Latest Ship Date. In this case, Earliest Ship Date and time is populated with the System date and time at the time of delivery detail creation.

- If the value you specify for the profile option OM: Source for TP Early

Ship/Deliver Date is Latest Ship Date, then Earliest Ship Date is the same as the Latest Ship Date.

The time portion of the Earliest Ship Date field is set to 00:01 in the local time of the ship-from facility.

#### **Latest Ship Date for a Delivery Line with Date Type Ship**

For a delivery line originating from Oracle Order Management and belonging to an order with date type Ship, Oracle Transportation Planning obtains the Latest Ship Date as follows.

- The Latest Ship Date is derived from a sequence of three fields in Oracle Order Management: Latest Acceptable Date (LAD), Promise Date (PD), and Scheduled Ship Date (SSD). The user **profile option OM: Sequence for TP Ship/Deliver Deadline** specifies which point to join this checking sequence at. Three options are available:
  - If the profile value you select is LAD > PD > SSD, then the Latest Ship Date is set equal to the Latest Acceptable Date (LAD). If the Latest Acceptable Date is not specified, then the Latest Ship Date is set to the Promise Date (PD). If neither the Latest Acceptable Date nor the Promise Date is specified, then the Latest Ship Date is set to the Scheduled Ship Date (SSD).
  - If the profile value you select is PD > SSD, then the Latest Ship Date is the same as the Promise Date. If the Promise Date is not specified, then the Latest Ship Date is set equal to the Scheduled Ship Date.
  - If the profile value you select is Scheduled Ship Date, then Latest Ship Date is set to the Scheduled Ship Date.
- The time portion of the Latest Ship Date is set according to the date it was derived from:
  - If the date is derived from Scheduled Ship Date, the time portion is 23:59.
  - If the date is derived from Promise Date or Latest Acceptable Date and the time portion of Promise Date or Latest Acceptable Date is any time other than 00:00 or 00:01, then that time is carried through to the Latest Ship Date. If the time portion is 00:00 or 00:01, the time portion in the Latest Ship Date is 23:59 in the local time of the ship-from facility.

#### **Earliest Delivery Date for a Delivery Line with Date Type Ship**

For a delivery line originating from Oracle Order Management that belongs to an order with date type Ship, the Earliest Delivery Date is not specified in Oracle Order Management.

#### **Latest Delivery Date for a Delivery Line with Date Type Ship**

For a delivery line originating from Oracle Order Management that belongs to an order with date type Ship, the Latest Delivery Date is not specified in Oracle Order Management.

#### **Ship Windows and Delivery Windows for Delivery Lines from Oracle Order Management, Date Type: Arrival**

#### **Earliest Ship Date for a Delivery Line with Date Type Arrival**

For a delivery line originating from Oracle Order Management and belonging to an order with date type Arrival, Oracle Transportation Planning obtains the Earliest Ship Date as follows.

- For a delivery line of an ATP enabled item, Earliest Ship Date is the same as Early Shipment Date (ESD), but with the time portion set to 00:01 in the local time of the ship-from facility.
- For a delivery line of a non-ATP item, the Earliest Ship Date is effectively null. The Earliest Ship Date is populated with the System date and time at the time of creation of delivery line.

#### **Latest Ship Date for a Delivery Line with Date Type Arrival**

For a delivery line originating from Oracle Order Management that belongs to an order with date type Arrival, Oracle Transportation Planning obtains the Latest Ship Date as follows.

The Latest Ship Date for the delivery line is effectively null. The Latest Ship Date is calculated as the Latest Delivery Date and time plus the number of days specified in the **profile option FTE: Late Ship Offset Days**. This profile value is seeded to 90 days.

#### **Earliest Delivery Date for a Delivery Line With Date Type Arrival**

For a delivery line originating from Oracle Order Management and belonging to an order with date type Arrival, Oracle Transportation Planning obtains the Earliest Delivery Date as follows.

The Earliest Delivery Date is based on the value you specify for the **profile option OM: Source for TP Early Ship/Deliver Date**. The values you can specify are Earliest Acceptable Date (EAD) and Latest Delivery Date (LD).

- If the profile value you specify is Earliest Acceptable Date, then the Earliest Delivery Date is the same as the Earliest Acceptable Date.

If the time portion of Earliest Acceptable Date is any time other than 00:00 or 23:59, the time portion for Earliest Delivery Date is derived from the Earliest Acceptable Date. If the time in the Earliest Acceptable Date is 00:00 or 23:59, the Earliest Delivery Date time is set to 00:01 in the local time of the ship-to facility. If Earliest Acceptable Date is not specified, then it implies that no early limit exists. This

delivery line can be delivered on or before the Latest Delivery Date.

- If the profile value you specify is Latest Delivery Date, then the Earliest Delivery Date is the same as the Latest Delivery Date.

The delivery line must be delivered on the Latest Delivery Date. The time portion of Earliest Delivery Date is set to 00:01 in the local time of the ship-to facility.

#### **Latest Delivery Date for a Delivery Line With Date Type Arrival**

For a delivery line originating from Oracle Order Management and belonging to an order with date type Arrival, Oracle Transportation Planning obtains the Latest Delivery Date as follows.

- In Oracle Order Management, the Latest Delivery Date is derived from a sequence of three fields in Oracle Order Management: Latest Acceptable Date (LAD), Promise Date (PD), and Scheduled Arrival Date (SAD). You specify the point at which to join this checking sequence using the **profile option OM: Sequence for TP Ship/Deliver Deadline**. Three options are available:
  - If the profile value you select is LAD > PD > SAD, then the Latest Delivery Date is set equal to the Latest Acceptable Date. If the Latest Acceptable Date is not specified, then the Latest Delivery Date is set to the Promise Date. If the Promise Date is not specified, then the Latest Delivery Date is set to the Scheduled Arrival Date.
  - If the profile value you select is PD > SAD, then the Latest Delivery Date is set equal to the Promise Date. If the Promise Date is not specified, then the Latest Delivery Date is set to the Scheduled Arrival Date.
  - If the profile value you select is the Scheduled Arrival Date, then the Latest Delivery Date is the same as the Scheduled Arrival Date.
- The time portion of the Latest Delivery Date is set according to the date it was derived from:
  - If the date is derived from Scheduled Arrival Date, the time is 23:59.
  - If the date is derived from Promise Date or Latest Acceptable Date and the time portion of Promise Date or Latest Acceptable Date is any time other than 00:00 or 00:01, then that time is carried through to the Latest Delivery Date. If the time portion is 00:00 or 00:01, the time portion in the Latest Delivery Date is 23:59 in the local time of the ship-to facility.

#### **Ship Windows and Delivery Windows for Delivery Lines from Oracle Purchasing**

Oracle Purchasing is the source application for delivery lines for purchase orders, drop ship orders, and outside processing orders.

The following table shows how Oracle Transportation Planning derives dates for delivery lines originating from Oracle Purchasing.

Oracle Transportation Planning Dates	Date in Oracle Purchasing
Earliest Ship Date	As populated on the Routing request for the Purchase Order
Latest Ship Date	As populated on the Routing request for the Purchase Order
Earliest Delivery Date	The Earliest Delivery Date is equal to the Promise Date minus the Days Early  If the Promise Date is not specified, then the Earliest Delivery Date is equal to the Need by Date minus the Days Early.
Latest Delivery Date	The Latest Delivery Date is equal to the Promise Date plus the Days Late  If the Promise Date is not specified, then the Latest Delivery Date is equal to the Need by Date plus the Days Late.

**Note:** Days Early and Days Late are specified on the receiving controls for the purchase order. They can also be specified at an organization level.

#### Ship Windows and Delivery Windows for Delivery Lines from Oracle Project Contracts

The following table shows how Oracle Transportation Planning derives dates for delivery lines originating from Oracle Project Contracts.

Oracle Transportation Planning Dates	Date in Oracle Project Contracts
Earliest Ship Date	Expected Ship date in Deliverable Tracking System
Latest Ship Date	Effectively null, the Latest Ship Date is populated with the System date as in the case of time of delivery detail creation plus a number of days specified in the profile option FTE: Late Ship Offset Days.
Earliest Delivery Date	Contract Line Start Date in Authoring and Deliverable Tracking System



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**Oracle Transportation  
Planning Dates****Date in Oracle Project Contracts**

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Latest Delivery DateDelivery Date in Authoring and Deliverable Tracking System

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# Scheduling Concurrent Manager Requests for Launch Plan

This appendix covers the following topics:

- Scheduling Concurrent Manager Requests for Launch Plan

## Scheduling Concurrent Manager Requests for Launch Plan

The Launch Transportation Planning Process concurrent program uses the Concurrent Manager Standard Request Submission, which is standard Oracle functionality. Transportation planners may want to launch a plan automatically on a pre-defined schedule, instead of manually triggering the Launch Plan process for each run. This section describes the procedure for specifying scheduled Launch Plan processes using existing Standard Request Submission functionality.

**Note:** While any concurrent request for a plan is being run, that plan remains locked. No planner is allowed to manipulate it further or to launch it until the plan is unlocked. An **X** icon displayed next to the Plan name node on the Planner Workbench navigation tree indicates a locked plan.

You can define a submission schedule by choosing the Schedule button on the Launch Transportation Planning Process window.

### Launch Transportation Planning Process Window

**Run this Request...**

Name: Launch Transportation Planning Process

Parameters: ACE-091806:No:No:Yes

Language: American English

**At these Times...**

Run the Job: As Soon as Possible

**Upon Completion...**

☒ Save all Output Files

Notify:

Print to: noprint

Buttons: Copy..., Languages..., Schedule..., Options..., Help (H), Submit, Cancel

This opens the Schedule window. The Schedule window provides you with several scheduling options. You can define a schedule to run either once or repeatedly.

- If you want to run the plan only once, you have two options:
  - Run the request as soon as possible
  - Run the request at a specific time
- If you want to run the plan repeatedly, you have two options:
  - Run the request at specific intervals
  - Run the request on specific days of a week or month.

To program the Launch Transportation Planning Process to run on a defined schedule, you must select either Periodically or On Specific Days on the Schedule window.

The Standard Request Submission functionality also enables you to re-use a previously defined and saved schedule. You may modify the saved schedule for this submission only or save the modified schedule with a new name for future use.

#### Periodically

Use the following procedure to set up periodic schedules for the Launch Plan

concurrent request.

#### **Schedule Window: Launch Plan Periodically**

The screenshot shows a dialog box titled "Schedule" with a close button (X) in the top right corner. At the top, there is a button labeled "Apply a Saved Schedule..." followed by two empty text input fields. Below this, on the left, is a group box titled "Run the Job..." containing five radio button options: "As Soon as Possible", "Once", "Periodically" (which is selected), "On Specific Days", and "Advanced". To the right of this group box are two text input fields: "Start At" with the value "06-JAN-2006 00:00:00" and "End At" which is empty. Below these fields is the text "Leave End Date blank to run indefinitely". Further right is a "Re-run every" section with a text input field containing "1" and a dropdown menu currently showing "Day(s)". Below this is another group box titled "Apply the Interval..." containing two radio button options: "From the Start of the prior run" (selected) and "From the Completion of the prior run". Below this group box is a checkbox labeled "Increment date parameters each run". At the bottom left is a checkbox labeled "Save this schedule". At the bottom right are three buttons: "Help", "OK", and "Cancel".

- **Start and End Dates:** In the Start At and End At fields, define the period in which the plan runs must occur.  
  
If the end date is not specified, the request or request set repeats indefinitely until you cancel it. Whether a request completes successfully or in error, Oracle Applications submits the next run only if the next requested start date and time is on or before the end date and time you have specified.
- **Interval:** This indicates the number of intervals between each submission of your request. You can specify an interval of minutes, hours, days, weeks, or months before submitting a request.
- **Apply the Interval:** Specify whether the system should measure the interval from the requested start time of the request or from the completion time of the request. It is recommended that you select the option Apply Interval From the Start of the Prior Run.
- **Increment Date Parameters:** Select this check box to enable scheduling of transportation plans. By selecting this check box, you adjust Plan Start and Plan End Dates to match the re-submission interval.

The following example illustrates how the launch plan process works, based on a specified schedule.

Suppose that you defined a transportation plan with the following plan start and end dates.

- Plan Start Date = 22-Sep-2003
- Plan End Date = 25-Sep-2003

Suppose that the Day Start Time is 8:00.

Consider a schedule defined as follows:

- Run the Job: Periodically
- Start at: 8-Sep-2003 11:00:00
- End at: 25-Sep-2003 11:00:00
- Interval: Weekly
- Apply the Interval: From the start of the prior run
- Increment date parameters each run check box: selected

This results in the transportation plan being launched according to the following schedule and plan start and end dates.

The following table shows an example illustrating periodically scheduled launch plan process.

Serial Number	Plan Launch Date	Plan Start Date	Plan End Date	Comments
1	20-Sep-2003 11:00:00	22-Sep-2003 08:00	25-Sep-2003 07:59	The initial launch of the plan would be as per the specified Plan Start and End dates in the Plan Options window.
2	27-Sep-2003 11:00:00	29-SEP-2003 08:00	2-Oct-2003 07:59	In subsequent launches of the plan, the plan start date is incremented by the interval duration (in this case 1 week) and the plan end date is incremented by the duration between plan start and end dates specified initially in the plan options form (in this case 3 days)
3	4-Oct-2003 11:00:00	6-Oct-2003 08:00	9-Oct-2003 07:59	--

Serial Number	Plan Launch Date	Plan Start Date	Plan End Date	Comments
4	11-Oct-2003 11:00:00	13-Oct-2003 08:00	16-Oct-2003 07:59	--

Note the following with regard to the Standard Request Submission functionality:

- You can submit a request for a transportation plan only if the Plan Start and End Dates are greater than or equal to the plan launch date.
- The initial launch of a transportation plan is based on the Plan Start and Plan End dates specified in the Plan Options window. In subsequent launches of the plan, the system increments the Plan Start date by the duration between the Plan Start and End Dates specified in the Plan Options window. However, the Day Start Time setting still governs the Plan Start Time and the Plan End Time. If the interval selected is less than a day, plan start and end times do not change, but are based on the Day Start Time.
- The Concurrent Manager Standard Request Submission functionality does not recognize manual changes made to the Plan Start and End Dates. If you have defined the submission schedule and the plan has been previously launched using this functionality, then the system updates the Plan Start and Plan End Dates based on dates in the Standard Request Submission request. The system does not honor manual updates to the Plan Start and End Dates.

### On Specific Days

Use the following procedure to schedule the Launch Plan concurrent process on specific days.

### Schedule Window: Launch Plan On Specific Days

- Start and End dates: In the Start at and End at fields, define the period in which to submit the request.

If you do not specify the end date, the request or request set repeats indefinitely until you cancel it. Whether a request completes successfully or in error, Oracle Applications immediately submits the next run only if the next requested start date and time is on or before the end date and time you have specified.

- Monthly schedule: Use the monthly calendar template to specify dates during the month to submit the request. You can select a date by clicking it. For example, when you select a date such as 5th, the request is resubmitted on the 5th of each month until the end date is reached. Note that you can select multiple dates.
- Weekly schedule: Use the weekly template to specify which day of the week to schedule the request. Note that you can select multiple days of the week.

You can also specify a date-wise schedule and days of the week schedule in combination.

The following example illustrates how the launch plan process works when it is scheduled to run on specific days.

Suppose that you have specified a schedule to run the plan on specific days of the month. Suppose that you defined a transportation plan with the following Plan Start and End dates.



- Plan Start Date = 22-Sep-2003 00:00
- Plan End Date = 25-Sep-2003 23:59

Suppose that Day Start Time is 00:00.

Consider a schedule defined as follows.

- Run the job: On Specific Days
- Start at: 10-Sep-2003 11:00:00
- End at: 15-Oct-2003 11:00:00
- Interval: Run on specific days - 5th, 14th, 28th of every month
- Increment date parameters each run check box: selected

The system launches the transportation plan according to the schedule in 'Example Illustrating Launch Plan Process Scheduled on Specific Days, page E-7.

Note that the first launch of the plan always uses the Plan Start and End dates specified in the Plan Options window. In subsequent launches of the plan, the Plan Start Date is incremented by the interval duration and the plan end date is incremented by the duration between Plan Start and End dates specified in the Plan Options window.

The following table shows an example of the launch plan process scheduled on specific days

Serial Number	Plan Launch Date	Plan Start Date	Plan End Date
1	14-Sep-2003 11:00:00	22-Sep-2003 00:00	25-Sep-2003 23:59
2	28-Sep-2003 11:00:00	6-Oct-2003 00:00	9-Oct-2003 23:59
3	5-Oct-2003 11:00:00	13-Oct-2003 00:00	16-Oct-2003 23:59
4	14-Oct-2003 11:00:00	22-Oct-2003 00:00	25-Oct-2003 23:59

The following example illustrates the scenario where a schedule is specified to run the plan on specific days of the week.

Consider a transportation plan 1 defined with the following Plan Start and End dates.

- Plan Start Date = 9-Sep-2003 00:00
- Plan End Date = 11-Sep-2003 23:59

- Day start time = 00:00

Consider a schedule defined as follows.

- Run the job: On Specific Days
- Start at: 8-Sep-2003 11:00:00 (Monday)
- End at: 20-Sep-2003 11:00:00 (Saturday)
- Interval: Run on specific days: Monday and Thursday of each week
- Increment date parameters each run check box: selected

The system launches the transportation plan 1 according to the following schedule:

Note that the first launch of the plan always uses the Plan Start and End dates specified in the Plan Options window. In subsequent launches of the plan, the Plan Start Date is incremented by the interval duration and the Plan End Date is incremented by the duration between Plan Start and End dates specified in the Plan Options window.

The following table shows an example illustrating launch plan process scheduled on specific days.

Serial Number	Plan Launch Date	Plan Start Date	Plan End Date
1	8-Sep-2003 11:00:00 (Monday)	9-Sep-2003 00:00	11-Sep-2003 23:59
2	11-Sep-2003 11:00:00 (Thursday)	12-Sep-2003 00:00	14-Sep-2003 23:59
3	15-Sep-2003 11:00:00 (Monday)	16-Sep-2003 00:00	18-Sep-2003 23:59
4	18-Sep-2003 11:00:00 (Thursday)	19-Sep-2003 00:00	21-Sep-2003 23:59

Note that the Concurrent Manager Standard Request Submission functionality does not recognize manual changes made to the Plan Start and End Dates. If you have defined the submission schedule and the plan has been previously launched using this functionality, then the system updates the Plan Start and Plan End Dates based on the date values in the Standard Request Submission request. The system does not honor manual updates to the Plan Start and End Dates.

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## Planning with Carrier Commitments

This appendix covers the following topics:

- Planning with Carrier Commitments

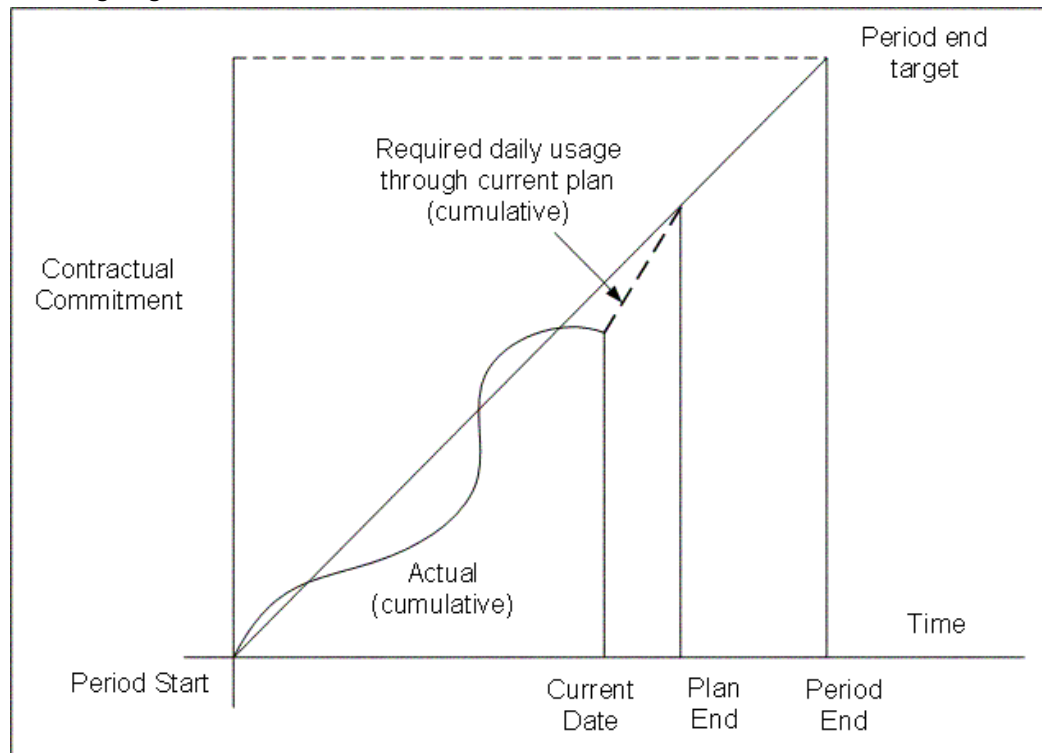
### Planning with Carrier Commitments

A carrier commitment represents a commitment to a carrier of a certain amount or percentage of the business in a lane and mode. You can specify carrier commitments over a period of time, such as day, week, month, quarter, half-year, or year. The system collects shipment history on a period-to-date basis and reflects the actual carrier utilization to date on the lane. For percentage commitments, the system also collects total lane traffic.

**Note:** The historical information that the system collects includes not only trips occurring before the current system date, but also, those appearing in the source system for the time period between the current date and the start of the plan horizon. Any trip found in the shipping tables from the start of the commitment period until the Plan Start Date including trips between the system date and the Plan Start Date are counted as historical information. The firm status of the trips have no bearing on the historical commitment. Oracle Transportation Planning considers this shipment history and calculates the planned (projected) utilization necessary so as to maintain the balance between the contracted and actual utilization. If historical information is not available for the period specified in the commitment, Oracle Transportation Planning pro-rates the absolute commitments to an average daily basis.

The following illustration shows the planning engine behavior with respect to carrier commitments. The examples following the figure describe the behavior.

### Planning Engine Behavior with Contractual Commitments



#### Example 1: Behavior of the planning engine when the carrier commitments are specified in terms of absolute units of trips, weight, or spend

Consider a carrier who has a commitment of 60 trips per month.

Number of business days in the month = 30

Required average number of trips per day =  $60/30 = 2$  trips per day

Actual trips tendered to the carrier after 15 days (from historical information) = 26 trips

Planning horizon = 4 days

Required number of trips to be tendered to the carrier at the end of 19 days to be on pace to meet the commitment =  $19 \times 2 = 38$  trips

If you run a plan at this point with a 4 day planning horizon, the plan requires assignment of  $(38-26) = 12$  trips to this carrier.

#### Example 2: Behavior of the planning engine when the carrier commitments are specified in terms of absolute units of trips, weight, or spend and the planning engine straddles two contractual periods

In 'Example 1, page F-2, if you run the plan on day 28, the plan straddles the last two days of month 1 and the first two days of month 2. In this case, the planning engine gives the carrier enough trips to bring the carrier up to the full allocation for the first period plus the prorated allocation for the second period. The second period does not have any history, because it has not started yet.

Actual trips tendered to the carrier after 28 days in month 1 (from historical information) = 54 trips

Required number of trips to be tendered to the carrier to meet the contractual commitment for month 1 = 60 trips

If we run a plan at this point with a 4-day planning horizon, the planning engine requires assignment of  $60 - 54 = 6$  trips to this carrier in month 1, and 4 trips for the next month prorated at 2 trips per day \* 2 days.

**Example 3: Behavior of the planning engine when the carrier commitments are specified in terms of percentage of trips, weight, or spend**

Consider a carrier who has a commitment of 70% of all the trips on a specific lane for that month.

Number of business days in the month = 30

At the end of 20 days, suppose that the lane has a total of 60 trips and the system has assigned 38 trips to the carrier. Carrier allocation for the 20 days =  $38/60 = 63\%$

Consider the planning cycle to be 3 days and the total number of trips generated for days 21, 22, and 23 on the lane to be 10 trips. The planning engine now assigns trips to the carrier so that the commitment of 70% is met.

The following table shows an example illustrating trips assigned to carrier based on percentage carrier commitment.

--	Total period (month)	Period to Date	Plan 1 Horizon	Period to End of the Plan 1 Horizon
Percentage of trips given to the carrier	70% (target)	63% (actual)	--	70% (target)
Time (days)	30	20	3	23 (3 day planning horizon)
Total trips	Not known	60	10	70
Trips assigned to carrier	Not known	38 (actual)	49-38 = 11 (minimum)	70% * 70 = 49 (minimum)

In this case, even if the system assigns all the trips to the carrier of interest, the carrier will not be brought up to the required allotment. Therefore, in this plan run, the system assigns all 10 trips to the carrier. In the next plan run, if the lane has 10 trips, the following situation results:

The following table shows an example illustrating trips assigned to carrier based on

percentage carrier commitment.

--	Total period (month)	Period to Date	Plan 2 Horizon	Period to End of the Plan 2 Horizon
Percentage of trips given to the carrier	70% (target)	69% (actual)	--	70% (target)
Time (days)	30	23	3	26 (3 day planning horizon)
Total loads	Not known	70	10	80
Trips assigned to carrier	Not known	48 (actual)	56-48 = 8	70% * 80 = 56

For this second plan, the system requires that at least 8 of the 10 trips on this lane be assigned to the carrier of interest.

**Note:** Carrier commitments by percentage require two period-to-date numbers (based on historical information): one to indicate the number of trips allotted to the carrier on this lane, and another for the total number of trips on this lane (total lane traffic).

The historical extract covers period start to plan start, even if the plan start is in the future. For example:

- Period start: February 1
- Current date: February 9
- Plan 1 start: February 10
- Plan 1 end: February 12
- Plan 2 start: February 11
- Plan 2 end: February 13

The historic extract for plan 2 includes actual completions during February 1-February 9 and current plans in the duration February 9-February 11. This includes released plan 1 information as well.

**contractual periods**

Consider a carrier who has a commitment of 70% of all the trips on a specific lane for a month.

Number of business days in the month = 25

Suppose that at the end of 20 days, the carrier has been given 38 trips out of a total of 60 trips for that lane.

Carrier allocation for the 20 days =  $38/60 = 63\%$

Consider the planning cycle to be 3 days and the total number of trips generated for days 21, 22, and 23 on this lane to be 10 trips. The planning engine now assigns trips to the carrier so that the contractual commitment of 70% can be met.

The following table shows an example illustrating the planning engine behavior when carrier commitment periods are straddled.

--	Total Period (Month 1)	Period to Date	Plan 1 Horizon	Period to End of Plan 1 Horizon
Percentage of trips given to the carrier	70% (target)	63% (actual)	--	70% (target)
Time (days)	25	20	3	23 (3 day planning horizon)
Total trips	Not known	60	10	70
Trips assigned to carrier	Not known	38 (actual)	49-38 = 11 (minimum)	70% * 70 = 49 (minimum)

In this case, even if all the trips are assigned to the carrier of interest, the carrier will not be brought up to the required allotment. Hence, in this plan run, the system assigns all 10 trips to the carrier. In the next plan run, suppose that the lane has 16 trips, of which 10 trips are on the last two days of the current period (month 1) and 6 trips are on the first day of the next period (month 2). The resulting situation is as follows:

The following table shows an example illustrating the planning engine behavior when carrier commitment periods are straddled.

--	Total Period (Month 1)	Period to Date	Plan 2 Horizon	Period to End of Plan 2 Horizon
----	---------------------------	----------------	----------------	---------------------------------------

--	Total Period (Month 1)	Period to Date	Plan 2 Horizon	Period to End of Plan 2 Horizon
Percentage of trips given to the carrier	70% (target)	69% (actual)	--	70% (target)
Time (days)	25	23	3	26 (2 day planning horizon for current month + day 1 of next month)
Total trips	Not known	70	10	80
Trips assigned to carrier	Not known	48 (actual)	$56 - 48 = 8$	$70\% * 80 = 56$

In this case, the planning engine gives the carrier enough trips so as to bring the carrier to the allocation for the first period. For this second plan, the system requires that at least 8 of the 10 trips on this lane in month 1 be assigned to the carrier of interest.

In addition, the planning engine allocates trips based on target percentage for the second period (month 2), since no history exists for month 2. Since the planning engine has built 6 trips starting on day 1 of month 2, the carrier receives 70% of the 6 trips, that is, the system assigns 4 trips to the carrier.

For this second plan, the system requires that at least 8 of the 10 trips on this lane in month 1 and 4 of the 6 trips in month 2 be assigned to the carrier of interest.



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## Resolving Carrier Commitment Conflicts

This appendix covers the following topics:

- Resolving Carrier Commitment Conflicts

### Resolving Carrier Commitment Conflicts

A carrier commitment represents a commitment to a carrier of a certain amount or percentage of the business in a lane and mode. For information on defining carrier commitment rules, see 'Defining Carrier Commitment Rules, page 4-34.

You may have set up different carrier commitment rules for the same lane or overlapping lanes, which may conflict with each other. The various conflict scenarios and their resolution is discussed in this section:

1. Conflict between absolute commitments of the same type: For example, conflicts between trip based commitments, weight based commitments, or spend based commitments

In such cases, use ranks to resolve the conflict. See 'Example 1, page G-2 for more information.

2. Conflict between percentage commitments of the same type: For example, conflicts between two percentage trip based commitments or two percentage weight based commitments

In such cases, use the following procedure:

1. Convert the percentage commitments to absolute values.
  2. Use ranks to resolve the conflicts as explained in 'Example 2, page G-3.
3. Conflicts between absolute commitments and percentage commitments of the same type: For example, a conflict between an absolute trip based commitment and a percentage trip based commitment

In such cases, use the following procedure:

1. Convert the percentage commitments to absolute values.
  2. Use ranks to resolve the conflicts as explained in 'Example 3, page G-3.
4. Conflicts between absolute commitments of different types: For example, conflicts between weight based and spend based carrier selection rules for less-than-truckload and parcel carriers and between trip based and spend based carrier selection rules for truckload carriers

In such cases, use ranks to resolve the conflicts as explained in 'Example 4, page G-4.

5. Conflicts between percentage commitments of different types. In these cases, use the following procedure:
  1. Convert the percentage commitments to absolute values.
  2. Use ranks to resolve the conflicts.
6. Conflicts between absolute commitments and percentage commitments of different types: For example, conflict between an absolute trip based commitment and a percentage spend based commitment

In such cases, use the following procedure:

1. Convert the percentage based commitments to absolute values.
2. Use ranks to resolve the conflicts.

**Example 1: Conflict between absolute commitments of the same type (for example, conflicts between two trip based commitments or two weight based commitments)**

Consider rules 456 and 675 for the lane Oakland to Phoenix with commitments to two carriers on the same lane and mode. Carrier ABC has a commitment of 20 trips per day and is ranked 1 and Carrier BCD has a commitment of 10 trips per day and is ranked 2.

If the total number of trips on any given day is 30, then the planning engine assigns 20 trips to Carrier ABC and 10 trips to Carrier BCD. Trip distribution is such as to incur the minimum total cost.

If the total number of trips on any given day is greater than 30, then the planning engine assigns at least 20 trips to Carrier ABC and at least 10 trips to Carrier BCD. Any remaining trips are assigned to the least cost carrier. This can be a carrier other than Carrier ABC and Carrier BCD.

If the total number of trips on any given day is less than 30, the planning engine assigns as many trips as possible to the carrier with a higher rank (rank 1 being the highest) up to the minimum commitment for that carrier. The system assigns the remaining trips to the lower rank carrier.

In this example, the planning engine assigns all trips or 20 trips, whichever is less, to Carrier ABC and any remaining trips to Carrier BCD.

**Example 2: Conflict between percentage commitments of the same type (for example, conflicts between two percentage trip based commitments or two percentage weight based commitments)**

Consider rules 674 and 676 for the lane California-Florida with commitments to two carriers on the same lane and mode: Carrier XYZ, rank 1 and Carrier ABC, rank 2.

Carrier XYZ has a commitment of 70%, while Carrier ABC has a commitment of 40% of the total weight to be transported by less-than-truckload on the California-Florida lane. First, convert these percentage commitments to absolute values. For example, if the total weight transported by less-than-truckload on the California-Florida lane in a specific plan run was 10000 lbs, then the system interprets these rules as 7000 lbs committed to Carrier XYZ, and 4000 lbs committed to Carrier ABC. Then the same rules as applied in Example 1 applies here. You can use ranks to resolve the conflict. In this example, the planning engine allocates 7000 lbs to Carrier XYZ and 3000 lbs to Carrier ABC.

**Example 3: Conflicts between absolute commitments and percentage commitments of the same type (for example, a conflict between an absolute trip based commitment and a percentage trip based commitment)**

Consider the following examples:

**Example 3a:** Four carriers on a certain lane have commitments and ranks as follows:

- Carrier A: 80% trip commitment, rank 1
- Carrier B: 40% trip commitment, rank 2
- Carrier C: 10 trips, rank 3
- Carrier D: 20 trips, rank 4

Consider a total of 25 trips. This translates the above commitments as follows:

- Carrier A: 20 trips, rank 1
- Carrier B: 10 trips, rank 2
- Carrier C: 10 trips, rank 3
- Carrier D: 20 trips, rank 4

Following the rules explained in Examples 1 and 2, Carrier A receives 20 trips and Carrier B receives 5 trips. Carriers C and D do not receive any trip.

**Example 3b:** Consider four carriers on the same lane with the following commitments and ranks:

- Carrier A: 1000 lbs, rank 1
- Carrier B: 2000 lbs, rank 2

- Carrier C: 40% commitment, rank 3
- Carrier D: 20% commitment, rank 4

Consider a total cargo weight of 4000 lbs. This translates the above commitments as follows:

- Carrier A: 1000 lbs, rank 1
- Carrier B: 2000 lbs, rank 2
- Carrier C: 1600 lbs, rank 3
- Carrier D: 800 lbs, rank 4

In this case, Carrier A receives 1000 lbs, Carrier B receives 2000 lbs, Carrier C receives 1000 lbs, and Carrier D receives nothing.

**Example 4: Conflict between absolute commitments of different types (for example, conflicts between a trip based commitment and a spend based commitment)**

Consider two rules with commitments to two carriers on the same lane and mode: Carrier A: 20 trip commitment, rank 1 and Carrier B: \$2000 spend commitment, rank 2.

If the total number of trips on any given day is exactly sufficient to satisfy 20 trips and additional trips corresponding to \$2000 in spend, then the system assigns 20 trips to Carrier A and trips constituting a spend of \$2000 to Carrier B. The system distributes the trip so as to achieve the minimum total cost.

If the total number of trips on any given day is greater than that required to satisfy both Carrier A and Carrier B, then the planning engine assigns 20 trips to Carrier A, \$2000 in spend to Carrier B, and the remaining trips to the least cost carrier. The least cost carrier can be a carrier other than Carriers A and B.

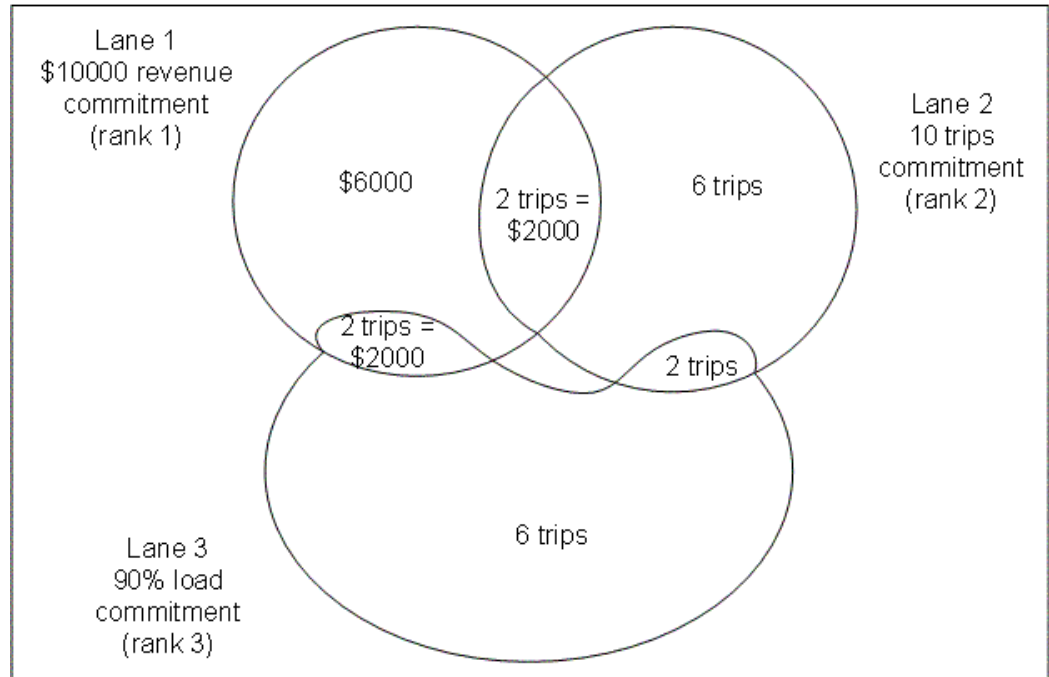
If the total number of trips on any given day is less than the number required to satisfy both Carrier A and Carrier B, the planning engine assigns as many trips as possible to the carrier with a higher rank up to the minimum commitment for that carrier. The planning engine assigns the remaining trips to the lower rank carrier. In this example, the system assigns all trips or 20 trips, whichever is less, to Carrier A and any remaining trips to Carrier B.

**Example 5: Overlapping lanes with commitment conflicts**

Consider the following example of overlapping lanes that have commitment conflicts. Consider the spend per trip to be \$1000 and the 24 trips in the plan to be distributed on lanes 1, 2, and 3.

The following figure illustrates the example.

**Example of Overlapping Lanes with Conflicting Carrier Commitments**



Lane 1, ranked 1, has a spend commitment of \$10000, Lane 2, ranked 2, has a commitment of 10 trips, and Lane 3, ranked 3, has a 90% trip commitment.

In such a case of overlapping commitments, you can still use ranks to resolve the conflicts. In this case, the spend commitment on Lane 1 is fulfilled first, then the 10 trips commitment on Lane 2, and finally the percentage trip commitment on Lane 3.

Since Lane 1 is ranked 1, the planning engine allots a total of 10 trips to Lane 1 spend per trip being \$1000, 10 trips to lane 2, and 4 trips to lane 3.



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# Release Process and the Transportation Execution System

This appendix covers the following topics:

- Release Process and the Transportation Execution System
- Release Process on Transportation Execution System
- Change Management

## Release Process and the Transportation Execution System

The following sections describe the mechanism and validations used by the transportation execution system in handling planned output released from the transportation planning system. This mechanism decides the success or failure of a release from the planning system. It considers changes in delivery lines and trips that happen within the transportation execution system after the data snapshot by the planning system.

## Release Process on Transportation Execution System

When the transportation planning system releases a trip, the transportation execution system determines whether to honor the release by the procedure described in this section.

During this procedure, transportation execution may discover some irreconcilable conflicts and fail parts of the release. 'Change Management, page H-7 discusses the resolution of such conflicts in detail.

The transportation execution system uses the following procedure to update its data based on plan elements released from the planning system. The unit of consideration is one trip released by the planning system.

1. The transportation execution system extracts all deliveries contained in a planned

trip. For each planned delivery, the execution system verifies if the planned delivery is a subset of a transportation execution delivery. If so, it re-uses the existing transportation execution delivery by removing the extra delivery lines so that the remainder is the same as the planned (released) delivery. Note that the transportation execution system removes the extra delivery lines only if the delivery is Not Firm in the execution system. This is required by Oracle Warehouse Management (if in use) so that the carton grouping ID for the delivery does not change when the planning system releases the same delivery back to transportation execution. If a delivery is Routing and Contents Firm or Contents Firm in the transportation execution system, then it will fail the release of the planned trips containing the delivery.

2. For the deliveries released from the planning system that are not subsets of a transportation execution system delivery, the transportation execution system extracts all delivery lines contained in these deliveries. The transportation execution system then tries to map the delivery lines to one or more transportation execution delivery lines. The following is a high level description of the strategy that the transportation execution system uses to create this mapping.

For each planned and released delivery line, the transportation execution system tries to locate the transportation execution delivery line with the same delivery line ID.

1. If a matched delivery line in the transportation execution system has a quantity lower than that of the planned delivery line, the transportation execution system looks for additional delivery lines that have the same source line ID. Any such delivery lines are split from the same order line. If the combined quantity is still less than that of the planned delivery line, the transportation execution system looks for additional delivery lines that have the same source line. These delivery lines are a result of order line splitting. In this process, the transportation execution system skips lines that have different delivery grouping criteria.

During the process of finding the delivery lines, the transportation execution system does not consider delivery lines that are already in a Contents Firm or Routing and Contents Firm delivery. After finding the delivery lines, the combined quantity of delivery lines in transportation execution can be lower than, equal to, or higher than the planned delivery line quantity. These delivery lines must not be assigned to a Routing and Contents Firm or Contents Firm delivery.

2. If the delivery line in transportation execution with the same delivery line ID has a larger quantity than the planned delivery line, then the transportation execution system decides between the following situations:
  - The delivery line quantity is larger because the planning engine split the delivery line. Therefore, another delivery line with the same ID is yet to be



released from planning.

- The delivery line quantity is larger because the original line quantity has increased in Order Management.

If this difference is due to order line quantity increase from Order Management, the transportation execution system follows the approach described in 'Changes Originating in Order Management, page H-7.

If this difference is because the planning engine split the delivery line, then the transportation execution system tries to split its delivery line to match the planned delivery line. Note that the transportation execution system does not split a delivery line in the following situations:

- The delivery line has a status of Released to Warehouse or Staged and Pick Confirmed in the transportation execution system and the ship from organization of the delivery line is enabled for warehouse management. This applies if Oracle Warehouse Management is running.
- The delivery line has a status of Released to Warehouse in the transportation execution system and the ship from organization of the delivery line is not enabled for warehouse management. This applies if Oracle Warehouse Management is running.

If the transportation execution system is unable to split the delivery line due to either of these reasons, the release process fails. Otherwise, the transportation execution system splits the delivery line into two so that one delivery line has the same quantity as the delivery line released from the planning system.

During the mapping process, the transportation execution system may need to split an existing order line in a manner that generates either a zero Picked Quantity or zero Requested Quantity.

If it is required to split a delivery line such that a split line has a zero Picked Quantity, the transportation execution system fails the release process as it does not allow zero Picked Quantity on a delivery line.

If it is required to split a delivery line such that a split line has a zero Requested Quantity, the transportation execution system does not fail the planning system's release process. However, the transportation execution system generates a warning when you try to Ship Confirm the zero Requested Quantity delivery line. You must then manually fix this problem by grouping this line with a non-zero Requested Quantity before ship confirming it.

3. After the mapping process, every planned delivery line has one or more transportation execution delivery lines mapped to it. The multiple delivery lines in transportation execution all have the same ship from, ship to, and item attributes. The transportation execution system therefore considers the multiple delivery lines as a single line in the subsequent reconciliation process. Transportation execution

proceeds to reconcile the potential differences on the delivery line level.

The following are the changes that may happen to the delivery line in the transportation execution system after data snapshot by the planning system. See 'Changes Originating in Order Management, page H-7 for more information.

1. The combined quantity of delivery lines with the same delivery line ID in transportation execution is different from that of the planned delivery line.
2. The ship from and ship to locations of the delivery lines in transportation execution change.
3. Order Management cancels the original transportation execution delivery line.
4. Order Management adds or removes the original transportation execution delivery line from an enforced ship set.
5. The scheduled dates of the transportation execution delivery lines change.
6. The release status of the transportation execution delivery lines change. See 'Changes Originating in Transportation Execution, page H-9 for more information.

Note that it is also possible not to find any delivery lines in the transportation execution system that map to released planned delivery lines. This may happen, for example, due to order line cancellation.

4. The transportation execution system tries to replicate the deliveries released from the transportation planning system. These deliveries can be of two types:
  1. Deliveries newly created by the planning engine
  2. Deliveries snapshot from the transportation execution system in the Contents Firm or Routing and Contents Firm status
    - For each delivery of type (a), the transportation execution system creates a duplicate delivery header. If the planned delivery is the same as a delivery existing in the transportation execution system, it re-uses the existing delivery. If the planned delivery is a subset of a delivery existing in transportation execution, the execution system attempts to unassign delivery lines from the existing delivery if it is not firm. See step 2 for details.

For each delivery of type (b), transportation execution finds the original delivery (if it is not deleted) and updates its delivery header. The transportation execution system also updates the Firm status of the delivery to be the same as the delivery released from the planning system. If the delivery is deleted, transportation execution creates a delivery header that duplicates the delivery released from the planning system.

- The transportation execution system tries to assign its delivery lines to the delivery in the transportation execution system. The system tries to replicate the delivery line assignment suggested by the planning system. The transportation execution system verifies the following while assigning delivery lines to deliveries:
  - If assigning the transportation execution delivery line to the transportation execution delivery violates the enforced delivery grouping rules or enforced ship set, the release process fails. Note that Oracle Transportation Planning honors only the ship from and ship to delivery grouping rules. It tries to honor the ship set rule also. A high occurrence of failed releases from the planning system may result if you enforce delivery grouping rules in the transportation execution system while the transportation planning system is present.
  - If the transportation execution delivery line does not belong to a Contents Firm or Routing and Contents Firm delivery or is not assigned to any delivery, the transportation execution system directly assigns this delivery line to the newly created delivery released from the planning system.
  - If the delivery line in the transportation execution system is in a Contents Firm delivery, transportation execution determines if the delivery that the delivery line is on is in conflict with the delivery released from transportation planning.

If the delivery line in the transportation execution system is in a Routing and Contents Firm delivery, transportation execution determines if the delivery and trips that the delivery line is on is in conflict with the delivery and trips released from transportation planning.

If the two deliveries are in conflict (delivery line assignments or Planned status do not agree), transportation execution fails the release.

If the two deliveries are not in conflict, transportation execution honors the release.

See 'Change Management, page H-7 for more information.

- If the assignment of delivery lines to a delivery in the transportation execution system violates the existing packing configuration of the transportation execution delivery line, the system fails the release.

For ship from organizations with warehouse management enabled, see 'Changes Originating in Warehouse Management Systems, page H-14.

For ship from organizations with no warehouse management enabled, see 'Changes Originating in Transportation Execution, page H-9.

- If the delivery line is packed into a container, the transportation execution system may fail the release if certain conditions are met. See 'Changes Originating in Transportation Execution, page H-9 for more information.
  - After replicating the deliveries released from the planning system, the transportation execution system deletes all empty deliveries on its side.
5. The transportation execution system tries to replicate the trip released from the planning system.
1. If the trip is newly created by the planning engine (that is, no corresponding trip exists in transportation execution), the transportation execution system creates a trip header that duplicates the trip released from planning.
  2. If the trip corresponds to an existing trip in transportation execution, the trip must have been snapshot by the planning system as Routing Firm or Routing and Contents Firm. The transportation execution system tries to locate the original trip and update its trip header, including Firm status, to be the same as the trip released from planning. If the original transportation execution system trip is deleted from the system, transportation execution creates a duplicate of the trip released from the planning system.
- Also, if a Routing Firm trip exists in transportation execution and has deliveries, the planning system, during optimization, may re-assign the deliveries of this trip to other trips. The Routing Firm trip may become empty. In such a case, on Release, the transportation execution system creates a new trip and the system release logic deletes the empty Routing Firm trip. The reference to that Routing Firm trip number is no longer maintained or available.
3. The transportation execution system then assigns all its deliveries created in step 4 to the trips determined in steps 5(a) and 5(b).
- If a delivery in transportation execution belongs to one or more Routing and Contents Firm trips, transportation execution determines if its trips are in conflict with the trips released from the planning system. See 'Changes Originating in Transportation Execution, page H-9 for more information.
- If the trips from transportation execution and planning are in conflict, the transportation execution system fails the release from planning.
- If the trips from transportation execution and planning are not in conflict, the transportation execution system honors the release from planning and directly assigns the delivery to the new trip.
- If a delivery in the transportation execution system does not belong to a Routing and Contents Firm trip or if it is not assigned to any trip,

transportation execution directly assigns this delivery to the new trip released from planning.

- After replicating the trip released from the planning system, the transportation execution system deletes all the empty trips on its side.

## Change Management

This section describes how the transportation execution system handles the release from the planning system. Transportation execution handles the release based on changes in delivery lines and deliveries and trips that originate from order management, transportation execution, and warehouse management systems.

### Changes Originating in Order Management

'Changes in Order Management and Handling of Plan Release by Transportation Execution, page H-7 presents the handling of planning system release process by the transportation execution system, based on changes in deliveries and delivery lines originating from Order Management.

The following table discusses changes in order management and handling of plan release by transportation execution.

Serial Number	Change Description	Transportation Execution System's Handling of Release Based on Change
1	Splitting an order line	The transportation execution system tries to match the potential splitting on the transportation execution side as well as the transportation planning release side.

Serial Number	Change Description	Transportation Execution System's Handling of Release Based on Change
2	Order line quantity increase	<p>If the delivery line has not been released to warehouse, the transportation execution system fails the release. This is due to the following reasons:</p> <ul style="list-style-type: none"> <li>• By failing the release, transportation execution alerts you to re-plan with this updated delivery line. Re-planning with the updated delivery lines keeps the increased amount on the same delivery as the original delivery line, rather than on a separate delivery.</li> <li>• This scenario may not happen often because before releasing a plan, the planning system tries to adjust the plan to accommodate post-snapshot Order Management originated changes. This process significantly reduces the number of failed releases.</li> </ul> <p>If the delivery line has been released for picking, transportation execution honors the released planned delivery line for the original quantity. The transportation execution system creates a new delivery line for the increased amount. If you now re-plan, the new delivery is captured in the new snapshot.</p>
3	Order line quantity decrease (but still greater than zero)	The transportation execution system honors the delivery line released from the planning system.
4	Change of order line ship from/to	The transportation execution system fails the release process.
5	Change of delivery grouping attributes on the delivery line (ship method, Freight Term, Intermediate Stops, etc.)	<p>If you enforce delivery grouping on these criteria, transportation execution fails the release from the planning system if the release violates the grouping criteria.</p> <p>If you do not enforce delivery grouping on these criteria, transportation execution honors the release from the planning system.</p>

Serial Number	Change Description	Transportation Execution System's Handling of Release Based on Change
6	Cancellation of order line (due to the cancellation of either the line or the order that contains the line)	The transportation execution system fails the release from the transportation planning system. Transportation execution informs the planning system of the cancellation through an error.
7	Change in ship set	<p>Oracle Transportation Planning considers ship set requirements, but does not guarantee that the released plan meets the ship set requirements. If you do not specify delivery grouping attributes other than Ship To and Ship From, that is, if fields other than Ship To and Ship From in the Delivery tab on the Shipping Parameters window are null, then transportation execution honors the released plan. If delivery grouping attributes other than Ship To and Ship From are specified in the Delivery tab on the Shipping Parameters window and if the change is the removal of a delivery line from a ship set, transportation execution honors the release.</p> <p>If delivery grouping attributes other than Ship To and Ship From are specified in the Delivery tab on the Shipping Parameters window and the change is the addition of a delivery line to a ship set, transportation execution honors the released plan if it happens to honor the new ship set. Otherwise, the release fails.</p>
8	Change in scheduled dates (for either a delivery line or a container)	<p>When Order Management changes scheduled dates, transportation execution automatically recalculates the earliest and latest ship and delivery dates.</p> <p>If the released delivery line's pick-up date is between the earliest and latest ship dates and the drop-off date is between the earliest and latest delivery dates, transportation execution honors the release.</p> <p>Otherwise, transportation execution honors the release from planning, but generates a WSH exception with high priority, alerting you that the plan is not feasible due to changes in scheduled dates. You can solve the problem by manually removing the delivery line from a trip if the trip cannot meet the pick-up and drop-off date windows of the delivery line. You must fix this before the delivery line can be ship confirmed.</p>

### Changes Originating in Transportation Execution

This section discusses changes originating from transportation execution due to a user

action or workflow event.

The following table presents the handling of planning system release by the Transportation Execution system, based on changes in deliveries and delivery lines originating from the transportation execution system.

Serial Number	Change Description	Transportation Execution System's Handling of Release Based on Change
1	Change to the delivery line's assigned delivery due to re-assignment of the delivery line to a different delivery	If the Firm status of the delivery in the transportation execution system at the time of planning system release is Not Firm or the delivery line is not assigned to a delivery, the transportation execution system honors the release of the planned delivery.
--	Change to the delivery line's assigned delivery due to change in the content of the delivery line's delivery	<p>If the Firm status of the delivery in the transportation execution system at the time of planning system release is Contents Firm, the transportation execution system fails the release from planning if the released delivery is in conflict with the delivery with the same ID in transportation execution.</p> <p>Two deliveries are in conflict if the delivery line assignment or Planned status of the two deliveries are different.</p>



Serial Number	Change Description	Transportation Execution System's Handling of Release Based on Change
--	Change to the delivery line's assigned delivery due to change in the Firm Status of the delivery line's delivery	<p>If the Firm status of the delivery in the transportation execution system at the time of planning system release is Routing and Contents Firm, the transportation execution system fails the release from the planning system if any of the following is true:</p> <ul style="list-style-type: none"> <li>• If the delivery released from the planning system is in conflict with the transportation execution delivery</li> <li>• If the trip or trips released from the planning system for the delivery are in conflict with the transportation execution system trips of the Routing and Contents Firm delivery</li> </ul> <p>Note that if the transportation execution delivery is on multiple trips, the system compares all trips for all legs of the delivery for the full itineraries of the trips.</p>

Serial Number	Change Description	Transportation Execution System's Handling of Release Based on Change
2	Change to the delivery line's trip itinerary (stops and timing)	<p>Transportation execution handles changes as follows only if the release process is not failed by the process explained in Serial No.1 of this table.</p> <ul style="list-style-type: none"> <li>• If all related transportation execution trips are Not Firm, transportation execution honors the release from planning.</li> <li>• If any of the related trips in transportation execution is Routing Firm, transportation execution handles the delivery as follows:</li> <li>• If the delivery is Routing and Contents Firm, which implies all related trips must be at least Routing Firm, transportation execution honors the release from planning if the released trips are not in conflict with trips in transportation execution.</li> <li>• If the delivery is Contents Firm or Not Firm, transportation execution honors the release from the planning system by re-assigning this delivery to the trip recommended by the planning engine.</li> <li>• If any of the trips in transportation execution to which the delivery is assigned is Routing and Contents Firm, transportation execution only honors the planning system release if the released delivery and trips are not in conflict with those in transportation execution. Otherwise, transportation execution fails the release.</li> </ul>
3	Change of delivery status	<p>This change has no direct impact on whether to fail or honor the release from the transportation planning system. Delivery status change updates the delivery Firm status, which determines whether to fail or honor the release from transportation planning using the rules described in case 1 of this table. Note that if a delivery status is Confirmed, In Transit, or Closed, the delivery must be Firm.</p>

Serial Number	Change Description	Transportation Execution System's Handling of Release Based on Change
4	Change of delivery ship method	Same as case 5 discussed under changes originating from Order Management.
5	Splitting the delivery line	Same as case 1 discussed under changes originating from Order Management.
6	Change of packing configuration by transportation execution user, assuming that the ship from organization is not enabled for warehouse management	If the release from the transportation planning system suggests a delivery line assignment configuration that conflicts with transportation execution packing configuration, then transportation execution fails the release.
7	Packing a delivery line into a container in transportation execution, assuming that the ship from organization is not enabled for warehouse management	<p>If the delivery line is packed into a container by a transportation execution user after data snapshot by the planning system, transportation execution re-assigns this delivery line if the following condition is met:</p> <p>The entire container's content and the container itself can be re-assigned to the same delivery according to plan released from the planning system.</p>
8	Change of delivery line release status to Released to Warehouse, assuming that the ship from organization is not enabled for warehouse management	<p>The transportation execution system honors the planning system release if the plan does not split the delivery line.</p> <p>If the plan release requires the delivery line to be split, transportation execution fails the release process.</p>

### Changes Originating in Transportation Execution Trip/Delivery Workbench

The following table presents the handling of plan output release by the Transportation Execution system, based on manual changes made to deliveries and trips on the Oracle Transportation Execution Delivery Workbench.

Serial Number	Change Description	Transportation Execution System's Handling of Release Based on Change
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Serial Number	Change Description	Transportation Execution System's Handling of Release Based on Change
1	Manual assignment or un-assignment of delivery to or from trip	<p>Same as case 1 discussed under changes originating from Transportation Execution due to user action or workflow event.</p> <p>Unless the trip is Routing and Contents Firm, the planning system can make changes to the trip and release the changed trip.</p>
2	Manual change of ship method (service)	<p>Same as case 5 discussed under changes originating from Order Management.</p> <p>If the ship method change occurs after data snapshot and before release from the planning system, during release, you will receive a warning message.</p>
3	Manual change of trip itinerary	<p>Same as case 2 discussed under changes originating from Transportation Execution due to user action or workflow event.</p> <p>Unless the trip snapshot from the transportation execution system is Routing and Contents Firm, the planning engine can make changes to the trip and release the changed trip to the transportation execution system. If the result of the optimization is an empty trip in place of the one snapshot from transportation execution, the release process deletes the trip from the transportation execution system even if the trip was Routing Firm at the time of snapshot.</p>

### Changes Originating in Warehouse Management Systems

The following table presents the handling of plan output release by Transportation Execution system, based on changes originating from Oracle Warehouse Management. This applies only to ship from organizations that are enabled for warehouse management.

Serial Number	Change Description	Transportation Execution System's Handling of Release Based on Change
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Serial Number	Change Description	Transportation Execution System's Handling of Release Based on Change
1	Change of packing configuration by Oracle Warehouse Management user	If the plan output released from the transportation planning system suggests a delivery line assignment configuration that conflicts with the packing configuration in the warehouse management system, transportation execution fails the release process.
2	Delivery line packed into a container by Oracle Warehouse Management user	<p>If the delivery line is packed into a container after the data snapshot by the planning system, transportation execution re-assigns the delivery line if the following conditions are met: The entire container's content and the container itself can be re-assigned to the same delivery according to plan released.</p> <p>The container is neither nested in another container nor loaded to dock. Unless the container is in Loaded to Dock status in the transportation execution system, the planning engine considers the container to be a virtual packaging and can break it.</p>
3	Change of delivery line release status to Released to Warehouse or Staged and Pick-Confirmed	<p>If the released plan does not require the delivery line to be split, transportation execution honors the release.</p> <p>If honoring the released plan requires splitting of the delivery line, transportation execution fails the release process.</p>
4	Delivery line is between container load and container drop	If the released plan requires re-assigning this delivery line, transportation execution fails the release. If the container is in loaded status, then a case of re-assigning the delivery line does not arise.

### Change in Quantity

A delivery line can have the following types of quantities: Shipped, Picked, and Requested. Oracle Transportation Planning snapshots the quantity in the order of Shipped-Picked-Requested, that is, the planning system snapshots the Shipped Quantity if it is available, then the Picked quantity if the Shipped quantity is not available, and then the Requested Quantity if neither Shipped nor Picked Quantity is available. It is possible that the system may populate a new type of quantity for a delivery line after the snapshot process.

In trying to honor the release from the planning system, the transportation execution system may split an existing order line in a way that generates either a zero Picked Quantity or zero Requested Quantity. In the case of zero Picked Quantity,

transportation execution fails the release as zero Picked Quantity is not allowed on a delivery line. In the case of zero Requested Quantity, transportation execution does not fail the release. However, the transportation execution system user is issued a warning at the point of Ship Confirming the zero Requested Quantity delivery line. You must solve this problem manually by grouping the delivery line with a non-zero Requested Quantity delivery line before ship confirming it.

The following table shows examples of such changes and the corresponding result in Transportation Execution.

Case Number	Requested Quantity at Release	Picked Quantity at Release	Shipped Quantity at Release	Snapshot by Planning System	Snapshot by Planning System	Order Lines in Transportation Execution after Honoring Planning System Release  (Requested Quantity, Picked Quantity, Shipped Quantity)
--	--	--	--	Quantity Type	Quantity	--
1	10	--	--	Requested	10	Line 1: 10, --, --
2	10	--	--	R	(5,5) split	Line 1: 5, --, -- Line 2: 5, --, --
3	10	12	--	R	10	Line 1: 10, 10, --Line 2: --, 2, --  This is treated as a quantity increase or Released to Warehouse case. The zero requested quantity causes a warning in the transportation execution system.

Case Number	Requested Quantity at Release	Picked Quantity at Release	Shipped Quantity at Release	Snapshot by Planning System	Snapshot by Planning System	Order Lines in Transportation Execution after Honoring Planning System Release  (Requested Quantity, Picked Quantity, Shipped Quantity)
--	--	--	--	Quantity Type	Quantity	--
4	10	12	--	R	(5,5) split	Line 1: 5, 5, 0Line 2: 5, 5, 0Line 3: 0, 2, 0  The zero requested quantity causes a transportation execution system warning.
5	10	10	10	R	10	Line 1: 10, 10, 10
6	10	10	12	R	10	Line 1: 10, 10, 10Line 2: 0, 0, 2  The zero picked quantity causes transportation execution to fail the planning system release.







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# Plan Output Windows

This appendix covers the following topics:

- General Information on Plan Output Windows
- Field Names Representing Different Values in Different Plan Output Windows
- Count of Orders
- Plan Output Windows

## General Information on Plan Output Windows

You view plans on the Planner Workbench navigation tree based on your specifications in the User Preferences window. You can either view all plans, only plans that have run, or only those plans that are currently running.

**Note:** Some fields in multi-record blocks on the plan output windows remain hidden. To view these fields, right-click anywhere on the multi-record table header and select Show Field. This shows a list of fields you can select from to view.

## User Access

At each node of the Planner Workbench navigation tree, for several View By options, you can perform a right-click to access a summary or a detail window.

## Icons

Details: A Details icon next to a field points to the relevant Details window. For example, when located next to the Carrier field, the icon provides access to the Carrier Details window. When located next to the Service field, the icon provides access to the Service Details window.

#### ***Details Icon***



**Edit:** An Edit icon next to a field points to lists of values for the field that it is located beside. For example, clicking the icon beside the Carrier field produces a list of values showing concatenated carrier-service-vehicle or carrier-service combinations, filtered for validity in the present lane.

#### ***Edit Icon***



**Jump Back:** Clicking the Jump Back icon at the top right corner of a plan output window displays a list of all the windows that exist in the same chain of drill-downs as this window. The order in which window names are displayed in this list is such that the window immediately preceding the window on which the icon was clicked appears first on the list.

If you select a window name in this list of values, that window appears on top and all the windows, which are descendants of the selected window in the chain closes, including the window on which the back icon was clicked. Any windows that are precedents of the selected window in the chain remains open.

#### ***Jump Back Icon***



## **Field Names Representing Different Values in Different Plan Output Windows**

Field names such as Weight and Total Orders or Orders represent different quantities depending on the plan output window you are viewing. This section presents the values that these fields display on the different windows.

### **Gross Weight and Net Weight**

With regard to the Weight value displayed on the different plan output windows, note that:

- Plan Summary, All Trips Summary, order related, customer related, and supplier related windows display Net Weight.
- Trip related and carrier related windows display Gross Weight.

Net weight is the weight of the products being shipped. Gross weight is the weight of the products plus the weight of any packaging used for shipping.

## Orders and Total Orders

This section describes what the value in the Orders or Total Orders field represents in the different windows and the different rows in the plan output windows.

### Plan Summary and All Trips Windows

Row	Value in the Orders Field
Total Trips	Total number of distinct order IDs present in the delivery lines in the plan
TLs, LTLs, Parcels, Continuous Moves	Total number of distinct order IDs present in the delivery lines carried by each of these modes
Unassigned Deliveries	Total number of distinct order IDs present in delivery lines that are not assigned

### All Truckloads Summary, All LTLs Summary, All Parcels Summary, and All Continuous Moves Summary Windows

Window Block	Value in the Total Orders or Orders Field
Summary	Total number of distinct order IDs present in the delivery lines carried by any of these modes
Multi-record (example, Truckloads block)	Total number of distinct order IDs present in the delivery lines carried by any one trip

### Other Windows

Window	Value in the Total Orders or Orders Field
LTL Details, Parcel Details	Total number of distinct order IDs present in the delivery lines carried by any one trip

<b>Window</b>	<b>Value in the Total Orders or Orders Field</b>
TL Details: Delivery block	Total number of distinct order IDs in the delivery lines of the delivery
Leg Details: Additional Leg Details tab	Number of distinct order IDs among the delivery lines on board the vehicle for this leg
Carrier Details: header region	Total number of distinct order IDs represented among delivery lines which are at any point carried by this carrier
Carrier Details: multi-record block	Total number of distinct order IDs represented among delivery lines which are at any point carried by trips of specific services offered by the carrier
Customer Details	Total number of distinct order IDs in the plan with the customer's facilities as ship-from or ship-to locations
Supplier Details	Total number of distinct order IDs in the plan with the supplier's facilities as ship-from or ship-to locations
Customer Facility Details, Supplier Facility Details	Total number of distinct order IDs in the plan that have the particular facility as the ship-from or ship-to location
My Facility Details	Total number of distinct order IDs present in delivery lines loaded or unloaded at the facility, overall and by specific modes
Carrier Facility Details	Total number of distinct order IDs present in delivery lines loaded or unloaded at the facility

## Count of Orders

The Count field appearing on the various plan output windows can represent any one of the following:

- Distinct source orders

- Count of all delivery lines
- Count of original delivery lines

The following examples illustrate how the system calculates the count of orders.

#### Example1

Consider the following delivery lines without packaged delivery case:

Source Order	Line ID	Split From Line ID
OE: 55023	100	--
OE: 55024	200	--
OE: 55024	300	200
OE: 55024	400	200

The count of orders in this example is two, since the number of original delivery lines is two (100 and 200). The transportation planning system does not consider the split deliveries 300 and 400 when calculating the count of orders.

#### Example 2

Consider the following delivery lines with package delivery cases:

Source Order	Line ID	Split From Line ID
OE: 55023	100	--
OE: 55024	200	--
OE: 55024	300	200
OE: 55024	400	200
OE: 55025	500	--
OE: 55025	600	--

Source Order	Line ID	Split From Line ID
WSH: 102	700	(intermediate packaged line including delivery lines 500 and 600)

The count of orders in Example 2 is three. This includes the count of original delivery lines that are not packaged plus the count of packaged delivery lines.

Original delivery lines that are not packaged and not split: 100, 200 = 2

Delivery lines 300 and 400 are not counted, since the system does not consider split delivery lines in the order count.

WSH: 102 contains delivery lines 500 and 600. Hence, the system does not consider delivery lines 500 and 600 in the order count.

Packaged delivery line: 700 = 1

Count of orders = 2 + 1 = 3

### Example 3

Consider the following delivery lines with two levels of packing:

Source Order	Line ID	Split From Line ID
OE: 55023	100	--
OE: 55024	200	--
OE: 55024	300	200
OE: 55024	400	200
OE: 55025	500	--
OE: 55025	600	--
WSH: 102	700	(intermediate packaged line including delivery lines 500 and 600)
OE: 55025	800	--

Source Order	Line ID	Split From Line ID
OE: 55026	900	--
WSH: 103	1000	(intermediate packaged line including delivery lines 800 and 900)
WSH: 104	1100	(outer packaged line including packaged lines 700 and 1000)

The count of orders in Example 3 is three. The orders considered in this count are 100, 200, and 1100.

Note that the intermediate packaged line 1000 includes delivery lines 800 and 900, which are of two different source orders. In spite of different source orders for the individual delivery lines, only the packaged line is counted.

## Plan Output Windows

The following sections present the different windows you can access to view plan output.

- 'Plan Summary, page I-8
- 'All Trips Summary, page I-9
- 'All Truckloads Summary, page I-10
- 'Truckload Details, page I-11
- 'Stop Details, page I-13
- 'Leg Details, page I-14
- 'Delivery Details, page I-15
- 'All LTLs Summary, page I-17
- 'LTL/Details, page I-18
- 'All Parcels Summary, page I-20
- 'Parcel Details, page I-21

- 'All Continuous Moves Summary, page I-23
- 'Continuous Move, page I-24
- 'All Orders, page I-25
- 'Order Details, page I-26
- 'Carrier Details, page I-27
- 'Service Details, page I-28
- 'Customer Facilities Summary, page I-29
- 'Supplier Facilities Summary, page I-30
- 'Facility Details, page I-31
- 'Supplier Details, page I-32
- 'Unassigned Delivery Details, page I-33
- 'My Facility Details, page I-34
- 'Carrier Facilities Summary, page I-35
- 'Carrier Facility Details, page I-36

## Plan Summary

The Plan Summary window provides a summary of the plan in terms of cost, total trips, and the number of trips, orders, weight, cube, pallets, and pieces in each mode. The Plan Summary window also shows the number of unassigned deliveries, if any, in the selected plan. The window shows the transportation cost with and without consolidation and the savings achieved through consolidation if the plan is defined such that it consolidates loads.

To access the Plan Summary window, select the Plan node on the Planner Workbench navigation tree, right-click, and then select Plan Summary.



### Plan Summary Window

Plan Summary (EB-PL-3B)

Plan **EB-PL-3B** **EB'S SEVERAL POOL POINT CHOICES**

Cost			Dates		
Total Plan Cost	17,295.22	USD	Plan Start Date	15-JAN-2006	10:00
Without Consolidation	35,033.10	USD	Plan End Date	29-JAN-2006	09:59
Savings	17,737.88	USD	Last Run	06-JAN-2006	00:00

TLs in Continuous Moves  %

Plan Output

	Count	Cost	Weight (...)	Cube	Pallets	Pieces	Orders
Total Trips	10	17,295.22	126,425	12,670	0	389	
TLs	4	9,618.75	116,675	11,693	0	359	
LTLs	6	7,676.47	9,750	977	0	30	
Parcels							
Continuous Moves	0	0.00	0	0	0	0	
Unassigned Deliveries							

Details

## All Trips Summary

The All Trips Summary window gives you a summary of the truckload, less-than-truckload, and parcel trips in the plan.

To access the All Trips Summary window, on the Planner Workbench navigation tree with View by Trips, expand a Plan node, select the All Trips node, then right-click and select All Trips Summary.

### All Trips Summary Window

	Count	Cost	Weight (...)	Cube	Pallets	Pieces	Orders
Total Trips	10	17,295.22	126,425	12,670	0	389	0
TLs	4	9,618.75	116,675	11,693	0	359	0
LTLs	6	7,676.47	9,750	977	0	30	0
Parcels							

Note that the Details button on this window remains disabled if the Total Trips row is selected. When you select the TLs, LTLs, or Parcels row, the Details button is enabled.

## All Truckloads Summary

The All Truckloads Summary window provides you with summary information regarding all truckload trips in your plan.

To access the All Truckloads Summary window, on the Planner Workbench navigation tree, with View by Trips, expand your Plan node and then the All Trips node. Then select All Truckloads, right-click, and select All Truckloads Summary.

### All Truckloads Summary Window

All Truckloads Summary (EB-PL-3B)

Number of Truckloads  Plan **EB-PL-3B** **EB'S SEVERAL POOL POINT CHOICE**

**Summary**

Total Gross Weight	<b>116,675</b>	<b>Lbs</b>
Total Cube	<b>11,693</b>	<b>FT3</b>
Total Pallets	<b>0</b>	
Total Pieces	<b>359</b>	
Total Orders	<b>4</b>	
Total Exceptions	<b>12</b>	

**Charges**

Fixed/Distance/Time	<b>9,618.75</b>	<b>USD</b>
Stops	<b>0.00</b>	<b>USD</b>
Load/Unload	<b>0.00</b>	<b>USD</b>
Layovers	<b>0.00</b>	<b>USD</b>
Other Accessorials	<b>0.00</b>	<b>USD</b>
<b>Total</b>	<b>9,618.75</b>	<b>USD</b>

**Truckloads**

Trip	Carrier	Service	Vehicle Type	Origin Company	Origin City	Origin State
11	PLC1	STANDARD	PM-PL-53 ft	My Company	Chicago	IL
12	PLC2	STANDARD	PM-PL-53 ft	My Company	Chicago	IL
13	PLC1	STANDARD	PM-PL-53 ft	My Company	Chicago	IL
14	PLC2	STANDARD	PM-PL-53 ft	My Company	Chicago	IL

The All Truckloads Summary window summarizes the total weight, cube, pallets, and pieces of deliveries planned for that travel in truckload trips. The Total Orders field shows the number of sales or purchase orders, which serve as source orders for delivery lines in the plan that are assigned to truckload trips. It also gives the number of exceptions related to truckload trips in your plan. You can view the details of these exceptions by clicking the Details button beside the Total Exceptions field. The All Truckloads Summary window also shows the different charges that the truckload trips in the plan would incur.

The multi-record block of the window lists all the truckload trips in the plan. You can select any trip and view individual trip related information using buttons available on the window.

**Note:** If a truckload trip is part of a continuous move, the trip appears under the truckload trips hierarchy as well as the continuous move hierarchy.

## Truckload Details

The Truckload Details window shows the details of a specific truckload trip.

To access the Truckload Details window, on the Planner Workbench navigation tree, expand the Plan node, All Trips node, and the All Truckloads node. Then select the

required truckload trip, right-click, and select Truckload Details. You may also access the Truckload Details window by selecting a trip in the All Truckloads Summary window and then clicking the Trip Details button.

### Truckload Details Window

The screenshot shows the 'Truckload Details (11)' window. It contains several sections: Trip information (Trip 11, Carrier PLC1, Service STANDARD, Vehicle Type PM-PL-53 ft, Distance 1,864 MI, Circuitry 0%, Stops 2), Plan (EB-PL-3B), Firm Status (Not Firm), and Charges (Fixed/Distance/Time 2,422.84 USD, Stop 0.00 USD, Other Accessorial 0.00 USD, Total 2,422.84 USD). Below these are 'Trip Stops and Legs' and 'Deliveries' sections, each with a table of data and a 'Details' button.

**Trip Stops and Legs**

Stop	Company	Facility	City	State	Arrival	Departure
1	My Company	SD_Confectio...	Chicago	IL	18-JAN-2006 14:34 CST	18-JAN-2006
2	Aerosol Inc	Aerosol Inc_6...	Santa Rosa	CA	20-JAN-2006 00:01 PST	21-JAN-2006

**Deliveries**

Delivery	Origin Company	Origin City	Origin State	Destination Company	Destination City
11	My Company	Chicago	IL	Aerosol Inc	Santa Rosa

The Truckload Details window shows the trip number, carrier, service, vehicle type, distance, circuitry, and number of stops of the trip. You can view the details of, or, if desired, change the carrier, service, and vehicle type of the trip using buttons beside these fields. You can also view the charges incurred by the selected trip. The User Edit flag indicates whether or not the trip has been manually modified after its creation by the planning engine. The Firm Status indicates whether the trip has been firmed. The Released and Release Status fields indicate whether or not the trip has been released and, if released, the release status.

The Trip Stops and Legs multi-record block of the Truckload Details window lists the stops and the legs of the truckload trip. The Deliveries block lists the deliveries that are on board the leg (or deliveries that are loaded or unloaded at the stop) selected in the Trip Stops and Legs block. You can select a stop or a leg in the Trip Stops and Legs block or a delivery in the Deliveries block and then click the appropriate Details button to view corresponding details.

## Stop Details

The Stop Details window provides the details of a facility at which a truckload trip stops.

To access the Stop Details window, on the Planner Workbench navigation tree, expand the Plan node, the All Trips node, the All Truckloads Node, and the specific Truckload node. Then select the stop for which you want to view the details, right-click, and select Stop Details. You can also access the Stop Details window by selecting a stop on the Truckload Details window and clicking Stop Details.

### Stop Details Window

The screenshot shows the 'Stop Details (Trip 11 : Stop 2)' window. At the top, it displays Trip 11, Stop 2, Plan EB-PL-3B, Carrier PLC1, Service STANDARD, and Vehicle Type PM-PL 53 ft. Below this are two tabs: 'Facility Details and Times' (selected) and 'Load and Unload Details'.

**Facility Details and Times**

Facility	Aerosol Inc
Company	Aerosol Inc_6330
Address	2408 Montgomery Dr
City, State	Santa Rosa, CA
ZIP	95405
Country	US

**Times**

Arrival Date and Time	20-JAN-2006 00:01	PST
Departure Date and Time	21-JAN-2006 14:41	PST
Stop Time	38:40	HR
Required Load Time	00:00	HR
Required Unload Time	38:40	HR

**Deliveries**

Delivery	Origin Company	Origin City	Origin State	Destination Company	Destination City
11	My Company	Chicago	IL	Aerosol Inc	Santa Rosa

At the bottom right, there is a button labeled 'Delivery Details'.

The Facility Details and Times tab shows the Facility Details and Times including address, state, ZIP and country of the facility, date and time of arrival at and departure from the facility, the stop time, and the required load and unload time. The Deliveries block lists the deliveries on the trip that are loaded or unloaded at this facility. The Load and Unload Details tab shows the cost for loading and unloading and the weight, cube, pallets, or pieces of cargo loaded or unloaded.

**Note:** The Earliest and Latest fields in the Deliveries block represent the earliest and latest allowed ship times for deliveries picked up at the stop. For deliveries dropped off at the stop, the Earliest and Latest fields represent the earliest and latest allowed delivery times. This only applies when the stop is the ship-from or ship-to point of the delivery.

If this stop is only an intermediate point in the itinerary of the delivery, no earliest or latest time exists for the delivery at the stop and the Earliest and Latest fields remain blank.

## Leg Details

The Leg Details window shows the details of a specific trip leg in a plan.

To access the Leg Details window, on the Planner Workbench navigation tree, expand the Plan node, the All Trips node, the All Truckloads Node, and the specific Truckload node. Then select the leg for which you want to view the details, right-click, and select Leg Details. You can also access the Leg Details window by selecting a leg on the Truckload Details window and clicking Leg Details.

### Leg Details Window: Stops and Deliveries Tab

Leg Details (Trip 11 : Leg 1)

Trip **11** Leg **1** Plan **EB-PL-3B** **EB'S SEVERAL POOL POINT CHOICES**

Carrier **PLC1**

Service **STANDARD**

Vehicle Type **PM-PL-53 ft**

Distance **1,864 MI**

Distance Charge **2,422.84 USD**

Stops and Deliveries Additional Leg Details

	Company	City	State	Arrival	Departure
From	My Company	Chicago	IL	18-JAN-2006 14:34 CST	18-JAN-2006 16:07 CST
To	Aerosol Inc	Santa Rosa	CA	20-JAN-2006 00:01 PST	21-JAN-2006 14:41 PST

Stop Details

Deliveries

Delivery Number	Origin Company	Origin City	Origin State	Destination Company	Destination C
11	My Company	Chicago	IL	Aerosol Inc	Santa Rosa

Delivery Details

The Stops and Deliveries tab of the Leg Details window shows the details of a trip leg including the from and to facility (stop) information and lists the deliveries that are on board the trip leg. You can view more information on the Additional Leg Details tab. This tab provides additional facility information for the stops of the leg including addresses and ZIP. The tab also displays the weight, cube, pieces, or pallets of cargo and the number of orders carried by the trip leg. It also shows the time of departure of the trip leg from the first stop and its arrival at the second stop, and the drive and wait time required. You can view the details of a facility by clicking the button beside the Facility field. You can update the departure and arrival times using the button beside

the Departure and Arrival fields.

### Leg Details Window: Additional Leg Details Tab

Leg Details (Trip 11 : Leg 1)

Trip **11** Leg **1** Plan **EB-PL-3B** **EB'S SEVERAL POOL POINT CHOICES**

Carrier **PLC1**

Service **STANDARD**

Vehicle Type **PM-PL-53 ft**

Distance **1,864 MI**

Distance Charge **2,422.84 USD**

Stops and Deliveries Additional Leg Details

**Origin**

Facility **SD\_Confectionery\_1** **SD\_Confectionery\_1**

Company **My Company**

City, State **Chicago IL**

Zip, Country **60601 US**

**Destination**

Facility **Aerosol Inc\_6330** **Aerosol Inc\_6330**

Company **Aerosol Inc**

City, State **Santa Rosa CA**

Zip, Country **95405 US**

	On Board	Max	Available	UOM	Utilization		Times
Gross Weight	38,675	44,000	5,325	Lbs	88 %	Departure	18-JAN-2006 16:07 CST
Cube	3,876	3,000	876	FT3	129 %	Arrival	20-JAN-2006 00:01 PST
Pallets	0	52	52		0 %	Drive Time	33:53 HR
Pieces	119					Layover Time	00:00 HR
Orders	0					Wait Time	00:00 HR

## Delivery Details

The Delivery Details window shows the details of a delivery including the delivery's firm status, direct and allocated costs, its origin and destination information, its weight, cube, pieces, and pallet count and its planned, earliest, and latest ship and deliver dates.

To access the Delivery Details window, on the Planner Workbench navigation tree, expand the Plan node, the All Trips node, the All Truckloads Node, the specific Truckload node, and the specific Trip Leg node. Then select the delivery for which you want to view details, right-click, and select Delivery Details. You can also access the Delivery Details window by selecting a delivery on the Truckload Details window and clicking Delivery Details.

## Delivery Details Window

**Delivery Details (11)**

Delivery: **11** Plan: **EB-PL-3B** **EB'S SEVERAL POOL POINT CHOICES**

Firm Status: **Not Firm** Allocated Cost: **2,422.84 USD** Direct Cost: **2,422.84 USD**

**Origin and Destination** | **Size and Dates**

**Origin**

Facility: **SD\_Confe** **SD\_Confectionery\_**

Company: **My Company**

City, State: **Chicago** **IL**

ZIP: **60601**

Country: **US**

**Destination**

Facility: **Aerosol In** **Aerosol Inc\_6330**

Company: **Aerosol Inc**

City, State: **Santa Rosa** **CA**

ZIP: **95405**

Country: **US**

**Delivery Content and Itinerary**

**Content** | **Itinerary**

Line	Parent Delivery Line	Source Type	Order	Order Line	Shipment Line	Item
17183		OE	55585	1	0	EB-WASH

**Order Summary**

Type: **Order**

Source: **OE** **55585**

Reference:

Net Weight: **40,625 Lbs**

Cube: **4,071 FT3**

Pallets: **0**

Pieces: **125**

The Delivery Details window shows the Firm status of the delivery, the cost allocated to it, and the direct cost if it were to travel by itself. The Origin and Destination tab in the Delivery Details window shows the origin and destination facility information for the delivery. The Size and Dates tab shows the gross weight, cube, number of pieces and pallets in the delivery. It also shows the early and late ship and deliver dates of the delivery.

The Delivery Content and Itinerary block lists the delivery lines constituting the delivery on the Content tab and the trips on which the delivery travels on the Itinerary tab. When you select a delivery line on the Content tab, the corresponding order information is displayed in the Order Summary region at the bottom of the Delivery Details window. When you select a trip on the Itinerary tab, the corresponding trip information is displayed in the Trip Summary region at the bottom of the Delivery Details window.

**Note:** The Content tab displays both the outermost package lines and the bottom-level product lines from the source sales or purchase orders. Inner packaged lines are not displayed. For example, if a delivery is comprised of a pallet which contains 10 boxes, which in turn contains 20 sales order lines, then the content view shows 21 records, one for the



pallet and twenty for the sales order lines.

## All LTLs Summary

The All LTLs Summary window provides a summary of all the less-than-truckload trips in the plan.

To access the All LTLs Summary window, on the Planner Workbench navigation tree, with View by Trips, expand your Plan node and then the All Trips node. Then select All LTLs, right-click, and select All LTLs Summary.

### All LTLs Summary Window

The screenshot shows the 'All LTLs Summary (EB-PL-3B)' window. At the top, it displays 'Number of LTLs' as 6 and 'Plan' as 'EB-PL-3B' with a sub-label 'EB'S SEVERAL POOL POINT CHOICE'. The window is divided into several sections:

- Summary:** A table showing total statistics:

Total Gross Weight	9,750	Lbs
Total Cube	977	FT3
Total Pallets	0	
Total Pieces	30	
Total Orders	6	
- Charges:** A table showing cost breakdown:

Weight Based/Minimum	7,676.47	USD
Accessorial	0.00	USD
<b>Total</b>	<b>7,676.47</b>	<b>USD</b>
- Total Exceptions:** A field showing 0 exceptions.
- LTLs:** A table listing individual trips:

Trip	Carrier	Origin Company	Origin City	Origin State	Destination Company
15	PLT1	My Company	Chicago	IL	Midas Inc
16	PLT1	My Company	Chicago	IL	Aerosol Inc
17	PLT1	My Company	Chicago	IL	Aerosol Inc
- Buttons:** Below the LTLs table are buttons for 'Select All', 'Map', 'Add to Map', 'Find Opportunities', and 'LTL Details'.
- Opportunities:** A section with a 'Utilization %' field and instructions: 'Select Analyze to calculate cost impact and exceptions for a selected trip or Add to Trip to implement the change.'
- Table:** A table for opportunities with columns: Trip, Origin Company, Origin City, Origin State, Destination Company, Destination City.
- Buttons:** Below the opportunities table are buttons for 'Select All', 'Map', 'Add to Map', 'Add to Trip', 'Trip Details', and 'Analyze'.

For a selected plan, the All LTLs Summary window shows the total weight, cube, pallets, pieces, and orders that are planned for transportation by less-than-truckload carriers. You can also view the total charges incurred by less-than-truckload trips in the plan. The All LTLs Summary window shows the number of exceptions related to less-than-truckload trips in your plan. You can also view the details of these exceptions by clicking the Details button beside the Total Exceptions field.

The multi-record LTLs block lists all the less-than-truckload trips in the plan. You can select a less-than-truckload trip and click the LTL Details button to view its details. To

find truckload trips to which you can possibly add a selected less-than-truckload trip, click Find Opportunities. The resulting truckload trips appear in the Opportunities block of the All LTLs Summary window. You can select one such trip and view its details or perform further actions, such as Analyze or Add to Trip using the buttons available at the bottom of the window.

## **LTL Details**

The LTL Details window shows the details of a specific less-than-truckload trip.

To access the LTL Details window, on the Planner Workbench navigation tree, expand the Plan node, All Trips node, and the All LTLs node. Then select the required less-than-truckload trip, right-click, and select LTL Details. You may also access the LTL Details window by selecting a trip in the All LTLs Summary window and then clicking the LTL Details button.

### LTL Details Window

The screenshot shows the 'LTL Details (15)' window. At the top, it displays trip details: LTL 15, Carrier PLT1, Service LTL Standard, Cost 1,412.45 USD, Plan EB-PL-3B, Firm Status Not Firm, Gross Weight 1,950 Lbs, Cube 195 FT3, Pallets 0, Pieces 6, and Orders 1. There are buttons for 'Map', 'Add to Map', and 'Find Opportunities'. Below this is a tabbed interface with 'Origin and Destination' and 'Delivery Lines'. The 'Delivery Lines' tab shows a table with one row: Line 17188, Delivery 20, Source Order Type OE, Order 55597, Origin Company My Company, and Origin City Chicago. A 'Delivery Details' button is at the bottom right of this section. Below the tabs is an 'Opportunities' section with a 'Utilization %' slider and a text prompt: 'Select Analyze to calculate cost impact and exceptions for a selected trip or Add to Trip to implement the change.' Below this is another table with columns: Trip, Origin Company, Origin City, Origin State, Destination Company, and Destination City. At the bottom are buttons: 'Select All', 'Map', 'Add to Map', 'Add to Trip', 'Trip Details', and 'Analyze'.

The window shows the trip number, carrier, service, cost, weight, cube, pallets and pieces of the less-than-truckload trip. You can view the details of, or, if desired, change the carrier and service of the trip using buttons beside these fields. The User Edit flag indicates whether or not the trip has been manually modified after its creation by the planning engine. The Firm Status indicates whether the less-than-truckload trip has been firm. The Released and Release Status fields indicate whether or not the trip has been released and if released, the release status.

The Origin and Destination tab in the LTL Details window shows the origin and destination facility information for the trip as well as the trip departure time from the origin and the trip arrival time at the destination. You can edit the departure time of the trip from the origin. The system automatically updates the arrival time at destination based on departure time at origin. The Delivery Lines tab in the LTL Details window lists the deliveries constituting the less-than-truckload trip. You can view the details of a delivery by selecting the delivery and clicking the Delivery Details button.

To find truckload trips to which you can possibly add the less-than-truckload trip, click Find Opportunities. The resulting truckload trips appear in the Opportunities block of the LTL Details window. You can select one such trip and view its details or perform further actions, such as Analyze or Add to Trip using the buttons available at the

bottom of the LTL Details window.

## All Parcels Summary

The All Parcels Summary window provides a summary of all the parcel trips in the plan.

To access the All Parcels Summary window, on the Planner Workbench navigation tree, with View by Trips, expand your Plan node and then the All Trips node. Then select All Parcels, right-click, and select All Parcels Summary.

### All Parcels Summary Window

The screenshot shows the 'All Parcels Summary (AASDR2\_CS9)' window. At the top, it displays 'Number of Parcels' as 81 and 'Plan' as 'AASDR2\_CS9' with a sub-plan 'Copy of SDR2\_CS9 - Full Plan'. The 'Summary' section on the left lists: Total Gross Weight (4,050 Lbs), Total Cube (810 FT3), Total Pallets (0), Total Pieces (81), and Total Orders (81). The 'Charges' section on the right shows: Weight Based/Minimum (2,172.75 USD), Accessorial (0.00 USD), and Total (2,172.75 USD). Below these, 'Total Exceptions' is 47. The 'Parcels' section contains a table with columns: Trip, Carrier, Origin Company, Origin City, Origin State, and Destination Company. The table lists three trips (8683, 8684, 8685) all with carrier 'SD\_Parcel1', origin 'My Company', city 'Redmond', state 'OR', and destination 'SD\_Confectionery'. Below the table are buttons: 'Select All', 'Map', 'Add to Map', 'Find Opportunities', and 'Parcel Details'. The 'Opportunities' section includes a 'Utilization %' field and instructions to 'Select Analyze to calculate cost impact and exceptions for a selected trip or Add to Trip to implement the change.' Below this is another table with columns: Trip, Origin Company, Origin City, Origin State, Destination Company, and Destination City. At the bottom are buttons: 'Select All', 'Map', 'Add to Map', 'Add to Trip', 'Trip Details', and 'Analyze'.

Trip	Carrier	Origin Company	Origin City	Origin State	Destination Company
8683	SD_Parcel1	My Company	Redmond	OR	SD_Confectionery
8684	SD_Parcel1	My Company	Redmond	OR	SD_Confectionery
8685	SD_Parcel1	My Company	Redmond	OR	SD_Confectionery

For a selected plan, the All Parcels window shows the total weight, cube, pallets, pieces, and orders that are planned for transportation by parcel trips. You can also view the total charges incurred by parcel trips in the plan. The All LTLs Summary window shows the number of exceptions related to parcel trips in your plan. You can also view the details of these exceptions by clicking the Details button beside the Total Exceptions field.

The multi-record Parcels block lists all the parcel trips in the plan. You can select a parcel trip and click the Parcel Details button to view the details of the specific trip. To find truckload trips to which you can possibly add a selected parcel trip, click Find

Opportunities. The resulting trips appear in the Opportunities block of the All Parcels Summary window. You can select one such trip and view its details or perform further actions, such as Analyze or Add to Trip using the buttons available at the bottom of the window.

## **Parcel Details**

The Parcel Details window shows the details of a specific parcel trip.

To access the Parcel Details window, on the Planner Workbench navigation tree, expand the Plan node, All Trips node, and the All Parcels node. Then select the required parcel trip, right-click, and select Parcel Details. You may also access the Parcel Details window by selecting a trip in the All Parcels Summary window and then clicking the Parcel Details button.

### Parcel Details Window

The screenshot shows the 'Parcel Details (8683)' window. It contains several sections:

- Parcel Information:** Parcel number 8683, Plan AASDR2\_CS9, Copy of SDR2\_CS9 - Full Plan. Carrier is SD\_Parcel1, Service is Ground(1), Cost is 32.33 USD. Firm Status is Not Firm. Gross Weight is 50 Lbs, Cube is 10 FT3, Pallets is 0, Pieces is 1, and Orders is 1.
- Buttons:** Map, Add to Map, Find Opportunities, User Edit (checkbox), Release (checkbox), Released, Release Status.
- Tabs:** Origin and Destination, Delivery Lines.
- Delivery Lines Table:**

Line	Delivery	Source Order Type	Order	Origin Company	Origin City
185188	8090	OE	57309	My Company	Redmond
- Opportunities Section:** Utilization % field. Text: 'Select Analyze to calculate cost impact and exceptions for a selected trip or Add to Trip to implement the change.'
- Opportunities Table:**

Trip	Origin Company	Origin City	Origin State	Destination Company	Destination City
------	----------------	-------------	--------------	---------------------	------------------
- Buttons at Bottom:** Select All, Map, Add to Map, Add to Trip, Trip Details, Analyze.

The Parcel Details window shows the trip number, carrier, service, cost, weight, cube, pallets, and pieces of the parcel trip. You can view the details of, or, if desired, change the carrier and service of the trip using buttons beside these fields. The User Edit flag indicates whether or not the trip has been manually modified after its creation by the planning engine. The Firm Status indicates whether the parcel trip has been firmed. The Released and Release Status fields indicate whether or not the trip has been released and if released, the release status.

The Origin and Destination tab in the Parcel Details window shows the origin and destination facility information for the trip as well as the trip departure time from the origin and the trip arrival time at the destination. You can edit the departure time of the trip from the origin. The system automatically updates the arrival time at destination based on departure time at origin. The Delivery Lines tab in the Parcel Details window lists the deliveries constituting the parcel trip. You can view the details of a delivery by selecting the delivery and clicking the Delivery Details button.

To find trips to which you can possibly add the parcel trip, click Find Opportunities. The resulting less-than-truckload and truckload trips appear in the Opportunities block of the Parcel Details window. You can select one such trip and view its details or perform further actions, such as Analyze or Add to Trip, using the buttons available at

the bottom of the Parcel Details window.

## All Continuous Moves Summary

The All Continuous Moves Summary window provides you with summary information regarding all continuous moves in your plan.

To access the All Continuous Moves Summary window, on the Planner Workbench navigation tree, with View by Trips, expand your Plan node and then the All Trips node. Then select All Continuous Moves, right-click, and select All Continuous Moves Summary.

### All Continuous Moves Summary Window

The screenshot shows the 'All Continuous Moves Summary (ND-CM-22)' window. At the top, it displays 'Number of Continuous Moves' as 1, 'Plan' as ND-CM-22, and a violation 'violation of carrier rules-distance'. The 'Summary' section shows 'Total Costs' as 1,042.80 USD, 'Total Savings' as 421.14 USD, 'TLs in Continuous Moves' as 100%, and 'Total Exceptions' as 2. Below this is a table for 'Continuous Moves' with one entry: CM 2, Carrier NDTL6, Vehicle Type ND-53 Ft Refrig..., Origin City Sioux City, Origin State IA, Destination City Sioux City, and Destination State IA. At the bottom is a table for 'Trips' with three entries: Trip 4 (Deadhead No, Carrier NDTL6, Service STANDARD, Vehicle ND-53 Ft ..., Origin Company My Company, Origin City Sioux City, Origin State IA), Trip 5 (Deadhead Yes, Carrier NDTL6, Service STANDARD, Vehicle ND-53 Ft ..., Origin Company ND-Computer, Origin City DENVER, Origin State CO), and Trip 6 (Deadhead No, Carrier NDTL6, Service STANDARD, Vehicle ND-53 Ft ..., Origin Company My Company, Origin City Oklahoma City, Origin State OK). Buttons for 'Select All', 'Map', 'Add to Map', 'CM Details', and 'Trip Details' are also visible.

Number of Continuous Moves: 1 Plan: ND-CM-22 violation of carrier rules-distance

**Summary**

Total Costs: 1,042.80 USD  
Total Savings: 421.14 USD  
TLs in Continuous Moves: 100 %  
Total Exceptions: 2

**Continuous Moves**

CM	Carrier	Vehicle Type	Origin City	Origin State	Destination City	Destination State
2	NDTL6	ND-53 Ft Refrig...	Sioux City	IA	Sioux City	IA

Select All Map Add to Map CM Details

**Trips**

Trip	Deadhead	Carrier	Service	Vehicle	Origin Company	Origin City	Origin State
4		NDTL6	STANDARD	ND-53 Ft ...	My Company	Sioux City	IA
5	Yes	NDTL6	STANDARD	ND-53 Ft ...	ND-Computer	DENVER	CO
6		NDTL6	STANDARD	ND-53 Ft ...	My Company	Oklahoma City	OK

Trip Details

The All Continuous Moves Summary window shows the total number of continuous moves in the plan total cost involved, savings that can be achieved by executing the continuous moves, and the percentage of truckload trips in the plan that are in continuous moves. It also gives the number of exceptions related to continuous moves in your plan. You can view the details of these exceptions by clicking the Details button beside the Total Exceptions field.

The Continuous Moves block of the window lists all the continuous moves in the plan. You can select a continuous move and view its details using the CM Details button. The Trips block in the All Continuous Moves Summary window lists the trips that constitute the continuous move, which is selected in the Continuous Moves block. You can select such a trip and click Trip Details to view its details.

## Continuous Move

The Continuous Move window provides the details of a specific continuous move.

To access the LTL Details window, on the Planner Workbench navigation tree, expand the Plan node, All Trips node, and the All LTLs node. Then select the required less-than-truckload trip, right-click, and select LTL Details. You may also access the LTL Details window by selecting a trip in the All LTLs Summary window and then clicking the LTL Details button.

### Continuous Move Window

Continuous Move (2)

Continuous Move: 2 Plan: ND-CM-22 violation of carrier rules-distance

Carrier: NDTL6 Total Cost: 1,042.80 USD Firm Status: Not Firm

Service: STANDARD Total Savings: 421.14 USD

Vehicle Type: ND-53 Ft Refrigerator Number of Trips: 3 Released: ☐ Release

☐ User Edit Total Distance: 1,477 MI Release Status:

Map Add to Map

**Trips**

Trip	Origin Company	Origin City	Origin State	Destination Company	Destination City
4	My Company	Sioux City	IA	ND-Computer	DENVER
5	ND-Computer	DENVER	CO	My Company	Oklahoma City
6	My Company	Oklahoma City	OK	ND-Computer	Sioux City

Trip Details

**Stops/Legs**

Stops Legs

Stop	Company	Facility	City	State	Arrival	Departure
2	ND-Computer	ND-Computer...	DENVER	CO	25-AUG-2008 10:14 MDT	25-AUG-2008 10:14 MDT
1	My Company	ND-Sioux City...	Sioux City	IA	25-AUG-2008 02:00 CDT	25-AUG-2008 02:00 CDT

Stop Details

The Continuous Move window shows the continuous move number, carrier, service, and vehicle type of the trip. You can view the details of, or, if desired, change the carrier, service, and vehicle type of the trip using buttons beside these fields. You can also view the cost incurred and savings fetched by the continuous move. The Continuous Move window also shows the number of trips in the continuous move and



the total distance covered in the move. The User Edit flag indicates whether or not the trip has been manually modified after its creation by the planning engine. The Firm Status indicates whether the trip has been firmed. The Released and Release Status fields indicate whether or not the trip has been released and if released, the release status.

The Trips block of the Continuous Move window lists the trips in the continuous move. You can select a trip and view its details by clicking the Trip Details button.

The Stops and Legs multi-record block of the Continuous Move window lists the stops and the legs of the trip selected in the Trips block. You can select a stop or a leg on the Stops tab or a trip leg on the Legs tab and then click the appropriate Details button to view its details.

## **All Orders**

The All Orders window provides a list of the source orders for all the delivery lines contained in a transportation plan. It also shows the total cost of the plan.

To access the All Orders window, on the Planner Workbench Navigator, switch to View by Orders, expand the Plans node and then the relevant Plan node. Select the All Orders node, then right-click and select All Orders Summary.

### All Orders Window

The screenshot shows the 'All Orders Window' for plan 'EB-PL-3B'. The total cost is 17,295.22 USD. The window displays a table of orders with the following data:

Source Type	Order	Reference Order	Weight (Net)	Cube	Pallets	Pieces
OE	55565		1,625	163	0	5
OE	55570		650	65	0	2
OE	55573		1,625	163	0	5
OE	55576		650	65	0	2
OE	55581		40,625	4,071	0	125
OE	55585		40,625	4,071	0	125
OE	55597		40,625	4,071	0	125

An 'Order Details' button is located at the bottom right of the window.

You can select an order and click Order Details to view the details of that order.

## Order Details

The Order Details window shows the details of a sales or purchase order.

To access the Order Details window, on the Planner Workbench Navigator, with View by Orders, expand the relevant Plan node and the All Orders node. Then select the order of which you want to view the details, right-click, and select Order Details. You can also access the Order Details window by selecting an order in the All Orders window and then clicking Order Details.

### Order Details Window

The screenshot shows the 'Order Details (OE:55573)' window. It contains several input fields for order information:

- Order: OE 55573
- Plan: EB-PL-3B EB'S SEVERAL POOL POINT CHOICES
- Reference Order: (empty)
- Net Weight: 1,625 Lbs
- Cube: 163 FT3
- Pallets: 0
- Pieces: 5

Below these fields is a section titled 'Delivery Lines' containing a table:

Delivery	Origin Company	Origin City	Origin State	Destination Company	Destination City
14	My Company	Chicago	IL	Julian Inc	Salinas

At the bottom right of the window is a button labeled 'Delivery Details'.

The Order Details window shows the order number and the reference order number. It also shows the weight, cube, pieces, and number of pallets in the order.

The Delivery Lines block of the Order Details window lists the delivery lines with the specific order as their source. You can select a delivery line and click Delivery Details to view details of the delivery line.

### Carrier Details

The Carrier Details window shows the total number of trips, weight, cube, pieces, pallets, and orders in a plan that have been assigned to a particular carrier. It also shows the total cost incurred by assigning these trips to the specific carrier.

To access the Carrier Details window, on the Planner Workbench Navigator, switch to View by Carriers. Then expand the Plans node and the relevant Plan node. Then select the carrier whose details you want to view, right-click, and select Carrier Details.

### Carrier Details Window

The Carrier Details (CRST) window displays summary information for a carrier and a table of services. The summary section includes fields for Carrier, Plan, Total Trips, Total Gross Weight, Total Cost, Total Cube, Total Pallets, Total Pieces, and Total Orders. The services section is a table with columns for Service, Mode, Trips, Cost, Weight, Cube, Pallets, Pieces, and Orders.

Carrier	Plan	Total Trips	Total Gross Weight	Total Cost	Total Cube	Total Pallets	Total Pieces	Total Orders
CRST	A-RP-MU-12	2	52,360 Lbs	954.40 USD	5,583 FT3	0	3,850	2

Service	Mode	Trips	Cost	Weight	Cube	Pallets	Pieces	Orders
STANDARD	TL	2	954.40	52,360	5,583	0	3,850	2
TL Team	TL	0	0.00	0	0	0	0	0

Service Details

The Services block of the Carrier Details window shows the number of trips the plan has assigned to each service offered by the carrier.

You can select a Service and click Service Details to view the details of the plan's usage of that service.

## Service Details

The Service Details window provides information about the total trips, weight, cube, pallets, pieces, and orders in a plan that are assigned to a particular carrier, service, and mode. It also shows the total cost involved in using this service.

To access the Service Details window, on the Planner Workbench Navigator, with View by Carriers, expand the relevant Plan node and the Carrier node. Then select the Service of which you want to view the details, right-click, and select Service Details.

### Service Details Window

The Service Details Window (PLC2:STANDARD) displays the following information:

Carrier	Plan	Copy of SDR2_CS9 - Full Plan
PLC2	AASDR2_CS9	
Service: STANDARD	Total Gross Weight	0 Lbs
Mode: TL	Total Cube	0 FT3
Total Trips: 1	Total Pallets	0
Total Cost: 936.09 USD	Total Pieces	0
	Total Orders	0

**Trips**

Trip	Mode	Origin Company	Origin City	Origin State	Destination Company
7306	TL	My Company	Denver	CO	PM-PL-LTL4

Trip Details

The Trips block lists the trips in the plan, which use this service. You can select a trip and click Trip Details to view the details of that trip.

## Customer Facilities Summary

The Customer Facilities Summary window provides a summary of the trips to and from a specific customer and the different facilities belonging to that customer.

To access the Customer Facilities Summary window, on the Planner Workbench Navigator, choose View by Customers. Expand the Plans node and then the specific Plan node. Select the customer whose details you want to view, right-click, and then select Customer Details.

### Customer Facilities Summary Window

The screenshot shows the 'Customer Facilities Summary (Aerosol Inc)' window. At the top, the title bar reads 'Customer Facilities Summary (Aerosol Inc)'. Below the title bar, there are input fields for 'Customer' (Aerosol Inc), 'Plan' (EB-PL-3B), and a dropdown menu (EB'S SEVERAL POOL POINT CHOICES). The main area is divided into two columns of summary data. The left column lists trip types and counts: Direct TLs (1), Multi-Stop TLs (0), LTLs (3), Parcels (0), and Total Trips (4). The right column lists total metrics: Total Cost (5,841.60 USD), Total Net Weight (42,900 Lbs), Total Cube (4,299 FT3), Total Pallets (0), Total Pieces (132), and Total Orders (3). Below this summary is a section titled '-Facilities' containing a table with columns: Facility, Description, City, State, Total Cost, Direct TLs, and Multi-St. The table has one row: Aerosol Inc\_6330, Aerosol Inc\_6330, Santa Rosa, CA, 5,841.60, 1, and Multi-St. At the bottom of the window are four buttons: Select All, Map, Add to Map, and Facility Details.

Facility	Description	City	State	Total Cost	Direct TLs	Multi-St
Aerosol Inc_6330	Aerosol Inc_6330	Santa Rosa	CA	5,841.60	1	

The Customer Facilities Summary window shows the total cost allocated to all deliveries to or from the specific customer. The window shows the number of direct truckload trips, multi-stop truckload trips, less-than-truckload trips, or parcel trips to or from the customer's facilities. The window also shows the total weight, cube, pallets, pieces, and orders arriving at or departing from the customer's facilities.

The Facilities multi-record block lists the customer's facilities. You can select a facility and click Facility Details to view the details of the facility.

## Supplier Facilities Summary

The Supplier Facilities Summary window provides a summary of the trips to and from a specific supplier and the different facilities belonging to that supplier.

To access the Supplier Facilities Summary window, on the Planner Workbench Navigator, choose View by Suppliers. Expand the Plans node and then the specific Plan node. Select the supplier whose details you want to view, right-click, and then select Supplier Details.

### Supplier Facilities Summary Window

Supplier: **Allied Manufacturing** Plan: **DEMO PLAN**

Total Cost	<b>164.35</b>	<b>USD</b>	Total Net Weight	<b>1,000</b>	<b>Lbs</b>
Direct TLs	<b>0</b>		Total Cube	<b>400</b>	<b>FT3</b>
Multi-Stop TLs	<b>0</b>		Total Pallets	<b>0</b>	
LTLs	<b>1</b>		Total Pieces	<b>100</b>	
Parcels	<b>0</b>		Total Orders	<b>1</b>	
Total Trips	<b>1</b>				

**Facilities**

Facility	City	State	Total Cost	Direct TLs	Multi-Stop TLs	LTLs
Allied Manuf...	San Jose	CA	164.35	0	0	1

Select All Map Add to Map Facility Details

The Supplier Facilities Summary window shows the total cost allocated to all deliveries to or from the specific supplier. The window shows the number of direct truckload trips, multi-stop truckload trips, less-than-truckload trips, or parcel trips to or from the supplier's facilities. The window also shows the total weight, cube, pallets, pieces, and orders arriving at or departing from the supplier's facilities.

The Facilities multi-record block lists the supplier's facilities. You can select a facility and click Facility Details to view the details of the facility.

## Facility Details

The Facility Details window shows the details of a specific facility in a plan.

To access the Facility Details window for a Customer or Supplier, on the Planner Workbench Navigator, with View by Facilities, expand the relevant Plan node. Then expand the All Customers node or All Suppliers node as is appropriate. Select the facility for which you want to view details, right-click, and select Customer Details or Supplier Details as is appropriate. This opens the corresponding Facilities Summary window. In the Facilities Summary window, the multi-record Facilities block lists the facilities belonging to the selected customer or supplier. Select a facility row and click Facility Details to open the corresponding Facility Details window.

### Facility Details Window (Customer)

The screenshot shows a software window titled "Facility Details (ACME\_SPF)". It contains several input fields for facility information, a summary of costs and volumes, and a table of orders.

**Facility Information:**

- Facility:
- Plan:
- Description:
- Company:
- Address:
- City, State:
- Zip:
- Country:
- Contact:
- Phone:

**Summary Statistics:**

Total Cost	1,303.15	USD	Direct TLs	0
Total Net Weight	18,240	Lbs	Multi-Stop TLs	1
Total Cube	1,925	FT3	LTLs	0
Total Pallets	0		Parcels	0
Total Pieces	1,400		Total Trips	1
Total Orders	1			

**Buttons:**

**Orders Section:**

—Orders

Source Type	Order	Reference Order	Weight (Net)	Cube	Pallets	Pieces	Co
OE	56677		18,240	1,925	0	1,400	

The Facility Details window shows the name, address, and contact number of the facility. It also shows the total allocated cost of all the deliveries inbound to or outbound from this facility and the total weight, cube, pallets, and pieces of deliveries being handled at the facility. The Total Orders field shows the total number of sales orders or purchase orders in the transportation plan, which involve the facility. The Facility Details window also shows the number of direct truckload, multi-stop truckload, less-than-truckload, and parcel trips arriving at or departing from the facility. The Facility Parameters button provides access to the Facility page in Oracle Transportation Execution where the facility parameters have been defined.

The multi-record Orders block lists the orders being handled by the facility. You can select an order and then click Order Details to view detailed order information.

## Supplier Details

The Supplier Details window provides the details of a supplier whose facilities are involved in the transportation plan.

To access the Supplier Details window, on the Planner Workbench Navigator, switch to View by Suppliers. Expand the Plans node and then the relevant Plan node. Select the supplier facility for which you want to view details, right-click, and select Supplier Details.



Note that, with View by Suppliers, the Plan node will have subordinate nodes only if the plan includes trips involving a supplier facility.

### Supplier Details Window

Supplier: **Consolidated Supplies** Plan: **DG-DEMO-2** **IMT demo testing**

Total Cost	<b>435.00</b>	<b>USD</b>	Total Net Weight	<b>5,500</b>	<b>Lbs</b>
Direct TLs	<b>0</b>		Total Cube	<b>1,400</b>	<b>FT3</b>
Multi-Stop TLs	<b>1</b>		Total Pallets	<b>0</b>	
LTLs	<b>0</b>		Total Pieces	<b>350</b>	
Parcels	<b>0</b>		Total Orders	<b>2</b>	
Total Trips	<b>1</b>				

**Facilities**

Facility	City	State	Total Cost	Direct TLs	Multi-Stop TLs	LTLs
Consolidate...	Springfield	TX	331.03	0	1	0
Consolidate...	Dallas	TX	103.97	0	1	0

Buttons: Select All, Map, Add to Map, Facility Details

The Supplier Details window provides information such as the total allocated cost of all deliveries in the plan that travel to or from the facilities of this supplier and the total weight, cube, pallets, pieces and orders in the plan that arrive at or depart from the supplier's facilities. The window also gives the number of direct truckload, multi-stop truckload, less-than-truckload, and parcel trips planned to arrive at or depart from this supplier's facilities. The multi-record Facilities block in the Supplier Details window lists the facilities of the supplier that are involved in the current plan. You can select a facility and click Facility Details to view the details of the selected supplier facility.

### Unassigned Delivery Details

The Unassigned Delivery Details window provides information about delivery lines in a plan that have not been assigned to any trip.

To access the Unassigned Delivery Details window, on the Planner Workbench Navigator, choose View by Unassigned Deliveries. Expand the Plans node and then the relevant Plan node. With View by Unassigned Deliveries, a Plan node will have subordinate nodes only if the plan contains an unassigned delivery. Select the unassigned delivery, right-click, and then select Delivery Details.

### Unassigned Delivery Details Window

Unassigned Delivery Details (24)

Delivery  Plan

Firm Status

**Origin and Destination**    **Size and Dates**

**Origin**

Facility

Company

City, State

ZIP

Country

**Destination**

Facility

Company

City, State

ZIP

Country

**Delivery Lines**

Line	Parent Delivery Line	Source Type	Order	Order Line	Shipment Line	Item
180355		OE	56599	1	0	MX411

**Order Summary**

Type Order

Source

Reference

Net Weight

Cube

Pallets

Pieces

The Origin and Destination tab in the Unassigned Delivery Details window shows the origin and destination facility information for the delivery. The Size and Dates tab shows the gross weight, cube, number of pieces and pallets in the delivery. It also shows the early and late ship dates of the delivery. The early and late deliver date fields remain blank because the delivery has not been assigned to any trip.

The multi-record Delivery Lines block lists the delivery lines constituting the unassigned delivery. You can view the details of the source order for a delivery line by clicking the Order link. The Order Summary region at the bottom of the Unassigned Delivery Details window shows the summary of the source order of a delivery line selected in the multi-record block.

## My Facility Details

The My Facility Details window shows the details of a specific host company (shipper) facility in a plan.

To access the facility details for any of your facilities (My Facility Details window), on the Planner Workbench Navigator, with View by Facilities, expand the relevant Plan node and then the All My Facilities node. Select the facility for which you want to view details, right-click, and select My Facility Details.

### My Facility Details Window

My Facility Details (ACE PRODUCTS - RALEIGH\_ ACE PRODUCTS - RALEIGH)

Facility: **ACE PRODUCT** Plan: **EB-MU-4B** **REDO BUILD**

Description: **ACE PRODUCTS - RA**

Company: **My Company**

Address: **111 Ace Circle**

City, State: **Raleigh** **NC**

Zip: **27617**

Country: **US**

Contact:

Phone:

☒ Total
 ☐ Load
 ☐ Unload

	TLs	LTLs	Parcels	Total	UOM
Count	3	1	0	4	
Gross Weight	54,000	3,000	0	57,000	Lbs
Cube	5,580	310	0	5,890	FT3
Pallets	0	0	0	0	
Pieces	4,500	250	0	4,750	
Orders	3	1	0	4	
Cost	1,048.17	1,290.00	0.00	2,338.17	USD

Map Add to Map Facility Parameters

**Orders**

Source Type	Order	Reference Order	Weight (Net)	Cube	Pallets	Pieces
OE	56591		25,800	2,666	0	2,150
OE	56598		27,000	2,790	0	2,250
OE	56604		3,000	310	0	250
OE	57005		1,200	124	0	100

Order Details

The My Facility Details window shows the name, address, and contact number of the facility. It also shows the total weight, cube, pallets, and pieces of deliveries inbound to or outbound from this facility. It also shows the total allocated cost of all these deliveries. The Total Orders field shows the total number of sales orders or purchase orders that are planned for, which involve the facility. The window shows such information separately for each mode: truckload, less-than-truckload and parcel. The My Facility Details window also shows the number of direct truckload, multi-stop truckload, less-than-truckload, and parcel trips arriving at or departing from the facility. The Facility Parameters button provides access to the Facility page in Oracle Transportation Execution where the facility parameters have been defined.

The multi-record Orders block lists the orders being handled by the facility. You can select an order and then click Order Details to view detailed order information.

### Carrier Facilities Summary

The Carrier Facilities Summary window provides the summary information of trips in a plan that are assigned to a specific carrier.

To access the Carrier Facilities Summary window, on the Planner Workbench Navigator, with View by Facilities, expand the relevant Plan node and then the All Carriers node. Select the carrier facility of which you want to view the details,

right-click, and select Carrier Details.

### Carrier Facilities Summary Window

Carrier Facilities Summary (New Penn Motor Express, Inc.)

Carrier: **New Penn Motor** Plan: **DEMO PLAN**

Total Cost	2,246.60 USD	Total Gross Weight	25,200 Lbs
Direct TLs	1	Total Cube	1,680 FT3
Multi-Stop TLs	0	Total Pallets	0
LTLs	3	Total Pieces	840
Parcels	0	Total Orders	6
Total Trips	4		

**Facilities**

Facility	Address	City	State	Direct TLs (In)	Direct TLs (Out)
New Penn Motor...	36 Hackensack Ave	Newark	NJ	1	

Select All Map Add to Map Facility Details

The Carrier Facilities Summary window shows the total cost of all the trips in a plan that are assigned to the carrier. The window shows the total gross weight, cube, pallets and pieces of deliveries assigned to the carrier. The Total Orders field shows the number of source orders of delivery lines in the plan that are being handled by the carrier. The window also shows the number of direct truckload, multi-stop truckload, less-than-truckload, and parcel trips in the plan that have been assigned to this carrier.

The multi-record Facilities block lists the carrier facilities involved in the transportation plan. You can select a facility and view its details by clicking the Facility Details button.

## Carrier Facility Details

The Carrier Facility Details window shows the details of a specific carrier facility included in a transportation plan.

To access the Carrier Facility Details window, on the Planner Workbench Navigator, with View by Facilities, expand the relevant Plan node and then the All Carriers node. Select the carrier facility of which you want to view the details, right-click, and select Carrier Details. This opens the Carrier Facilities Summary window. In the Carrier Facilities Summary window, the multi-record Facilities block lists the facilities belonging to the carrier that are used in the plan. Select a facility row and click Facility Details to open the Carrier Facility Details window.

### Carrier Facility Details Window

Carrier Facility Details (New Penn Motor Express, Inc.\_12205)

Facility: **New Penn Mot** Plan: **DEMO PLAN**

Description: **New Penn Motor Expr**

Carrier: **New Penn Motor Expr**

Address: **36 Hackensack Ave**

City, State: **Newark NJ**

Zip: **07101**

Country: **US**

Contact:

Phone:

	Load	Unload	UOM
Total Gross Weight	12,600	12,600	Lbs
Total Cube	840	840	FT3
Total Pallets	0	0	
Total Pieces	420	420	
Total Orders	3	3	
Direct TLs	0	1	
Multi-Stop TLs	0	0	
LTLs	3	0	
Parcels	0	0	

Facility Parameters

**Trips**

	Count	Cost	Weight (Gross)	Cube	Pallets	Pieces
<b>Total Trips</b>	4	2,246.60	25,200	1,680	0	
<b>TLs</b>	1	1,585.10	12,600	840	0	
<b>LTLs</b>	3	661.50	12,600	840	0	
<b>Parcels</b>	0	0.00	0	0	0	

Details

The Carrier Facility Details window shows the name, address, and contact number of the carrier facility. It also shows the total weight, cube, pallets, and pieces of deliveries being loaded or unloaded at the carrier facility. The Total Orders field shows the total number of sales orders or purchase orders in the plan, the deliveries of which are loaded or unloaded at the facility. The Carrier Facility Details window also shows the number of direct truckload, multi-stop truckload, less-than-truckload, and parcel trips in the plan that are loaded or unloaded at the carrier facility. The Facility Parameters button provides access to the Facility page in Oracle Transportation Execution where the facility parameters have been defined.

The multi-record Trips block shows the total number, cost, weight, cube, pieces, and pallets of deliveries arriving at or departing from the carrier facility by truckload, less-than-truckload, and parcel trips. You can select a row and then click Details to view corresponding detailed information. For example, if you select the TLs row and click Details, the All Truckloads Summary window opens.



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## Navigation Path

This appendix covers the following topics:

- Navigation Path

### Navigation Path

This appendix presents the navigation paths you may follow to open the application windows indicated in this guide.

Some of the windows accessible using the Transportation Planner responsibility, such as Truckload Details and Delivery Details, can be accessed using many different navigational paths using buttons on different windows. Note that the following table provides only one of the navigational paths you may use to access these windows.

**Note:** Brackets surrounding an entity in a path indicate a button selection. For example, [Details] indicates the Details button you must click.

Parentheses surrounding an entity indicate a node in the Planner Workbench navigation tree that you must expand. For example, (All Trips) indicates that you must expand the All Trips node on the navigation tree.

Braces surrounding an entity indicate that the entity is a toolbar menu. For example, {Plan} indicates the Plan toolbar menu in Oracle Transportation Planning.

The following table lists all windows and navigation paths.

Window Name	Seeded Responsibility	Navigation Path
-------------	-----------------------	-----------------

Window Name	Seeded Responsibility	Navigation Path
Add Shipment to Trip	Transportation Planner	<p>Transportation Planning &gt; Planner Workbench &gt; Plans (tab) &gt; View by Trips &gt; (Plans) &gt; (specific Plan) &gt; (All Trips) &gt; (All Truckloads) &gt; (All LTLs) &gt; (All Parcels) &gt; select any two entities &gt; right-click &gt; Add Shipment to Trip</p> <p>The two entities can be any two entities, such as, two less-than-truckload or parcel trips, one parcel and one less-than-truckload trip, an unassigned delivery and a less-than-truckload or parcel trip, and a less-than-truckload trip and a truckload trip.</p>
All Continuous Moves Summary	Transportation Planner	Transportation Planning > Planner Workbench > Plans (tab) > View by Trips > (Plans) > (specific Plan) > All Continuous Moves > right-click > All Continuous Moves Summary
All Parcels Summary	Transportation Planner	Transportation Planning > Planner Workbench > Plans (tab) > View by Trips > (Plans) > (specific Plan) > (All Trips) > All Parcels > right-click > All Parcels Summary
All LTLs Summary	Transportation Planner	Transportation Planning > Planner Workbench > Plans (tab) > View by Trips > (Plans) > (specific Plan) > (All Trips) > All LTLs > right-click > All LTLs Summary
All Trips Summary	Transportation Planner	Transportation Planning > Planner Workbench > Plans (tab) > View by Trips > (Plans) > (specific Plan) > All Trips > right-click > All Trips Summary
All Truckloads Summary	Transportation Planner	Transportation Planning > Planner Workbench > Plans (tab) > View by Trips > (Plans) > (specific Plan) > (All Trips) > All Truckloads > right-click > All Truckloads Summary



Window Name	Seeded Responsibility	Navigation Path
Analyze: Add to Trip	Transportation Planner	Transportation Planning > Planner Workbench > Plans (tab) > View by Trips > (Plans) > specific Plan > right-click > Exceptions > Under-utilization of vehicle capacity Exception Type > [Details] > [Find Opportunities] > Find trips to add to the under-utilized trip (radio button) > specific trip > [Analyze]
Analyze: Create Trip	Transportation Planner	Transportation Planning > Planner Workbench > Plans (tab) > View by Facilities > (Plans) > (specific Plan) > (All My Facilities) > (All Customers) > (All Suppliers) > (All Carriers) > any two facilities > right-click > Create Trip > [Analyze]
Analyze: Unassign Delivery	Transportation Planner	Transportation Planning > Planner Workbench > Plans (tab) > View by Customers > (Plans) > (specific Plan) > (Customer Name) > (specific Order) > Delivery > right-click > Unassign Delivery from Trip > [Analyze]
Assign Calendars	Manufacturing and Distribution Manager	Order Management > Shipping > Setup > Calendars > Assign
Carriers	Manufacturing and Distribution Manager	Order Management > Shipping > Setup > Freight Carriers, Cost Types > Freight Carriers
Carrier Details	Transportation Planner	Transportation Planning > Planner Workbench > Plans (tab) > View by Carriers > (Plans) > (specific Plan) > specific Carrier > right-click > Carrier Details
Categories	Manufacturing and Distribution Manager	Inventory > Setup > Items > Categories > Category Codes

Window Name	Seeded Responsibility	Navigation Path
Continuous Move Details	Transportation Planner	Transportation Planning > Planner Workbench > Plans (tab) > View by Trips > (Plans) > (specific Plan) > (All Continuous Moves) > specific Continuous Move > right-click > Continuous Move Details
Copy Plan	Transportation Planner	Copy Plan
Create Query	Transportation Planner	Transportation Planning > Planner Workbench > Queries (tab) > [Create Query]
Create Trip	Transportation Planner	Transportation Planning > Planner Workbench > Plans (tab) > View by Facilities > (Plans) > (specific Plan) > (All My Facilities) > (All Customers) > (All Suppliers) > (All Carriers) > any two facilities > right-click > Create Trip
Customer Facilities Summary	Transportation Planner	Transportation Planning > Planner Workbench > Plans (tab) > View by Customers > (Plans) > (specific Plan) > specific Customer > right-click > Customer Details
Delete Stop from Trip	Transportation Planner	Transportation Planning > Planner Workbench > Plans (tab) > View by Trips > (Plans) > (specific Plan) > (All Trips) > (All Truckloads) > (specific multi-stop Truckload) > specific Stop > right-click > Delete Stop from Trip
Delete Trip	Transportation Planner	Transportation Planning > Planner Workbench > Plans (tab) > View by Trips > (Plans) > (specific Plan) > (All Trips) > (All Truckloads) or (All LTLs) or (All Parcels) > specific Trip > right-click > Delete Trip

Window Name	Seeded Responsibility	Navigation Path
Delivery Details	Transportation Planner	Transportation Planning > Planner Workbench > Plans (tab) > View by Customers > (Plans) > (specific Plan) > (specific Customer) > (specific Order) > specific Delivery > right-click > Delivery Details
Dissolve Continuous Move	Transportation Planner	Transportation Planning > Planner Workbench > Plans (tab) > View by Trips > (Plans) > (specific Plan) > (All Continuous Moves) > specific Continuous Move > right-click > Dissolve Continuous Move
Empty Trips and Dead Stops	Transportation Planner	Transportation Planning > Planner Workbench > Plans (tab) > View by Trips > (Plans) > (specific Plan) > (All Trips) > (All Truckloads) > specific Trip > right-click > Delete Trip > [Yes]  You click Yes on a prompt window. This window appears if trip deletion results in empty trips or dead stops.
Exceptions and Recommendations	Transportation Planner	Transportation Planning > Planner Workbench > Plans (tab) > View by Trips > (Plans) > specific Plan > right-click > Exceptions
Exception Details	Transportation Planner	Transportation Planning > Planner Workbench > Plans (tab) > View by Trips > (Plans) > specific Plan > right-click > Exceptions > Exception Type > [Details]
Facility Details	Transportation Planner	Transportation Planning > Planner Workbench > Plans (tab) > View by Customers > (Plans) > (specific Plan) > (specific Customer) > specific Facility > right-click > Customer Facility Details  Similar drill-down path exists for carrier and supplier facilities.

Window Name	Seeded Responsibility	Navigation Path
Facility Trip and Shipment Detail Report Parameters	Transportation Planner	Reports > Facility Trip and Shipment Detail
Filter Plan by Date	Transportation Planner	Transportation Planning > Planner Workbench > Plans (tab) > View by Trips > (Plans) > specific Plan > Filter by Date
Filter Plan by Region	Transportation Planner	Transportation Planning > Planner Workbench > Plans (tab) > View by Trips > (Plans) > specific Plan > Filter by Region
Find	Transportation Planner	Transportation Planning > Planner Workbench > Plans (tab) > View by Trips > (Plans) > (specific Plan) > (All Trips) > (All LTLs) > specific Less-than-Truckload > right-click > Map > [Find]
Find/Enter Customers	Manufacturing and Distribution Manager	Customers > Standard
Find Opportunities	Transportation Planner	Transportation Planning > Planner Workbench > Plans (tab) > View by Trips > (Plans) > specific Plan > {Tools} > Find Unassigned Deliveries > [Find Opportunities]
Find Requests	Transportation Planner	Others > Request
Find System Profile Values	System Administrator	Profile > System
Find Unassigned Deliveries	Transportation Planner	Transportation Planning > Planner Workbench > Plans (tab) > View by Trips > (Plans) > specific Plan > {Tools} > Find Unassigned Deliveries

Window Name	Seeded Responsibility	Navigation Path
Global Preferences	<ul style="list-style-type: none"> <li>Transportation Planner (View-Only mode)</li> <li>Transportation Planning Administrator (Edit mode)</li> </ul>	Setups > Global Preferences
Global Shipping Parameters	Manufacturing and Distribution Manager	Order Management > Shipping > Setup > Define Global Parameters
Launch Order Update	Transportation Planner	Transportation Planning > Planner Workbench > Plans (tab) > View by Trips > (Plans) > specific Plan > {Plan} > Update Orders
Leg Details	Transportation Planner	Transportation Planning > Planner Workbench > Plans (tab) > View by Trips > (Plans) > (specific Plan) > (All Trips) > (All Truckloads) > (specific Truckload) > Delivery Leg > right-click > Leg Details
LTL Details	Transportation Planner	Transportation Planning > Planner Workbench > Plans (tab) > View by Trips > (Plans) > (specific Plan) > (All Trips) > (All LTLs) > specific Less-than-Truckload > right-click > LTL Details
Location	Manufacturing and Distribution Manager	Inventory > Setup > Items > Organizations > Locations
Maintain Auto-Release Rule Set	Transportation Planner	Transportation Planning > Plan Options > Edit Plan Options > specific Plan > Auto-Release (tab) > [Maintain Rule Set]

Window Name	Seeded Responsibility	Navigation Path
Map	Transportation Planner	<p>Transportation Planning &gt; Planner Workbench &gt; Plans (tab) &gt; View by Trips &gt; (Plans) &gt; (specific Plan) &gt; (All Trips) &gt; (All LTLs) &gt; specific Less-than-Truckload &gt; right-click &gt; Map</p> <p>Similar drill-down path exists for truckload, parcel, continuous move, delivery leg, or stop for display on the Map window.</p>
Master Item	Manufacturing and Distribution Manager	Inventory > Items > Master Items
Master or Carrier Trip and Shipment Detail Report Parameters	Transportation Planner	Reports > Master or Carrier Detail
Master Order Detail Report Parameters	Transportation Planner	Reports > Master Order Detail
Master Summary Report Parameters	Transportation Planner	Reports > Master Summary
My Facility Details	Transportation Planner	<p>Transportation Planning &gt; Planner Workbench &gt; Plans (tab) &gt; View by Facilities &gt; (Plans) &gt; (specific Plan) &gt; (All My Facilities) &gt; specific Facility &gt; right-click &gt; My Facility Details</p>
Order Details	Transportation Planner	<p>Transportation Planning &gt; Planner Workbench &gt; Plans (tab) &gt; View by Facilities &gt; (Plans) &gt; (specific Plan) &gt; (All My Facilities) &gt; (specific Facility) &gt; specific Order &gt; right-click &gt; Order Details</p>
Parcel Details	Transportation Planner	<p>Transportation Planning &gt; Planner Workbench &gt; Plans (tab) &gt; View by Trips &gt; (Plans) &gt; (specific Plan) &gt; (All Trips) &gt; (All Parcels) &gt; specific Parcel trip &gt; right-click &gt; Parcel Details</p>

Window Name	Seeded Responsibility	Navigation Path
Performance	Transportation Planner	Transportation Planning > Planner Workbench > Plans (tab) > View by Trips > (Plans) > specific Plan > right-click > Performance
Personal Profile Values	Transportation Planner	<p>Others &gt; Profiles</p> <p><b>Note:</b> Some of the profile options are not available to the Transportation Planner or Transportation Manager responsibilities. You can set these options only by using the seeded Transportation Planning Administrator and System Administrator responsibilities. You can set these options through the Personal Profile Values window. Use any of the following navigation paths to open the window:</p> <ol style="list-style-type: none"> <li>1. Planner Workbench -&gt; Edit -&gt; Preferences -&gt; Profiles</li> <li>2. Navigator window -&gt; Others &gt; Profiles</li> </ol>
Planner Workbench	Transportation Planner	Transportation Planning > Planner Workbench

Window Name	Seeded Responsibility	Navigation Path
Plan Options	Transportation Planner	<ul style="list-style-type: none"> <li>Transportation Planning &gt; Plan Options &gt; Edit Plan Options &gt; specific Plan</li> <li>Transportation Planning &gt; Plan Options &gt; View Plan Options &gt; specific Plan</li> <li>Transportation Planning &gt; Plan Options &gt; Define Default Template</li> </ul> <p>Selecting View Plan Options opens the Plan Options window with fields protected against update. Selecting Define Default Template opens the Plan Options window used for defining the Default Plan Options template.</p>
Plan Summary	Transportation Planner	Transportation Planning > Planner Workbench > Plans (tab) > View by Trips > (Plans) > specific Plan > right-click > Plan Summary
Pool and Skip Point Activity Detail Report Parameters	Transportation Planner	Reports > Pool and Skip Point Activity Detail
Quick Trip Build	Transportation Planner	Transportation Planning > Planner Workbench > Plans (tab) > View by Trips > (Plans) > specific Plan > {Tools} > Find Unassigned Deliveries > [Quick Trip Build]
Regions and Zones	Manufacturing and Distribution Manager	Order Management > Shipping > Setup > Regions and Zones > Regions and Zones



Window Name	Seeded Responsibility	Navigation Path
Related Exceptions	Transportation Planner	<p>Transportation Planning &gt; Planner Workbench &gt; Plans (tab) &gt; View by Trips &gt; (Plans) &gt; specific Plan &gt; right-click &gt; Exceptions &gt; Exception Type &gt; [Details] &gt; [Related Exceptions]</p> <p>Note that the Related Exceptions button is available only on the Exception Details windows of those exception types that have related exceptions.</p>
Related Trips	Transportation Planner	Transportation Planning > Planner Workbench > Plans (tab) > View by Trips > (Plans) > specific Plan > {Tools} > Find Release Candidates > specific Trip > [Related Trips]
Release	Transportation Planner	Transportation Planning > Planner Workbench > Plans (tab) > View by Trips > (Plans) > specific Plan > {Plan} > Release Entire Plan or Release Flagged Trips
Release Candidates	Transportation Planner	Transportation Planning > Planner Workbench > Plans (tab) > View by Trips > (Plans) > specific Plan > {Tools} > Find Release Candidates
Requests	Transportation Planner	Others > Request or Others > Request > [Find]
Save Query	Transportation Planner	Transportation Planning > Planner Workbench > Queries (tab) > [Create Query] > Enter search criteria > Plans (tab) or execute another query
Schedule	Transportation Planner	Transportation Planning > Planner Workbench > Plans (tab) > View by Trips > (Plans) > specific Plan > {Plan} > Launch Plan > [Schedule]

Window Name	Seeded Responsibility	Navigation Path
Service Details	Transportation Planner	Transportation Planning > Planner Workbench > Plans (tab) > View by Carriers > (Plans) > (specific Plan) > (specific Carrier) > specific Service > right-click > Service Details
Shipping Parameters	Manufacturing and Distribution Manager	Order Management > Shipping > Setup > Shipping Parameters
Shipping Transactions	Manufacturing and Distribution Manager	Order Management > Shipping > Transactions > [Find]
Shuttle Trip Activity Detail Report Parameters	Transportation Planner	Reports > Shuttle Trip Activity
Stop Details	Transportation Planner	Transportation Planning > Planner Workbench > Plans (tab) > View by Trips > (Plans) > (specific Plan) > (All Trips) > (All Truckloads) > (specific Truckload) > specific Stop > right-click > Stop Details
Suppliers	Manufacturing and Distribution Manager	Accounts Payable > Suppliers > Entry
System Profile Values	Transportation Planning Administrator	Others > Profile
Transit Times	Manufacturing and Distribution Manager	Order Management > Shipping > Setup > Regions and Zones > Transit Times
Transportation Plan Names	Transportation Planner	Transportation Planning > Plan Names
Truckload Details	Transportation Planner	Transportation Planning > Planner Workbench > Plans (tab) > View by Trips > (Plans) > (specific Plan) > (All Trips) > (All Truckloads) > specific Truckload > right-click > Truckload Details

Window Name	Seeded Responsibility	Navigation Path
Unassign Delivery from Trip	Transportation Planner	Transportation Planning > Planner Workbench > Plans (tab) > View by Customers > (Plans) > (specific Plan) > (specific Customer) > (specific Order) > specific Delivery > right-click > Unassign Delivery from Trip
User Preferences	Transportation Planner	Setups > User Preferences
Users	System Administrator	Security > User > Define
View Query	Transportation Planner	Transportation Planning > Planner Workbench > Queries (tab) > [View Query] > [OK] (list of values window)
Workday Calendar	Manufacturing and Distribution Manager	Order Management > Shipping > Setup > Calendars > Enter



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# Glossary

## A

### **API (Applications Programming Interface)**

A published interface to accomplish a business or scientific function. An API defines a contract to its users by guaranteeing a published interface but hides its implementation details.

### **arrival set**

A set of order lines that are expected to arrive at the same time (and possibly on the same trip) to an ultimate destination, but possibly from different origins.

### **ATP (Available to Promise)**

The ability to promise finished goods availability based on a statement of current and planned material supply.

Available to Promise represents the quantity of current on-hand stock, outstanding receipts, and planned production which has not been committed through a reservation. In Oracle Inventory, you define the types of supply and demand that should be included in your ATP calculation. This refers to the ability to promise availability based on a pre-defined statement of current and planned supply.

### **auto-release rules**

Rules used to control the automatic release of trips after a plan has run successfully. After the plan run is completed, trips matching the rules are immediately and automatically released for execution without requiring manual intervention. Each rule can be composed of one or more conditions. Such a condition applies a trip attribute such as carrier, supplier, customer, vehicle utilization, time to departure, circuitry, or mode to the release of trips.

For example, you can specify auto-release rules such as, " release all truckloads that have utilization greater than 90% and are assigned to carrier XYZ."

### **auto-release rule set**

A set of multiple auto-release rules. See 'auto-release rules, page Glossary-1.

**available to ship window**

The time between a delivery line's earliest available to ship date/time and latest ship date/time.

**C****carrier commitment**

An agreement between a transportation service provider (carrier) and a shipper under which the transportation provider agrees to perform service at a negotiated price and the shipper agrees to commit a specified amount of business to the carrier.

Carrier commitments indicate the minimum volume of business that a shipper will give to a carrier. A transportation planner can define shipper-carrier commitments in the following ways.

- Trip based commitment: For example, 20 trips daily
- Weight based commitment: For example, 2000 lbs monthly
- Spend based commitment: For example, \$2,000.00 in monthly shipping spend

Commitments can also be expressed as a percentage of total trips, weight, or spend.

**carrier commitment rule set**

A group of carrier commitment rules. Carrier commitment rule sets are not shipping organization specific, but are global. Multiple carrier commitment rule sets can be defined, but only one rule set can be used as a constraint for a given plan.

**carrier load rules**

Rules specified by carriers, such as maximum number of stops in a multi-stop trip; interspersal of pick-up and drop-off stops allowed or not; maximum total distance that will be covered by a truck; maximum total time a truck will travel; maximum total distance that will be traversed per day; minimum layover time; maximum driving time per day; and maximum on-duty time per day.

**carrier standing appointment**

Time windows defined for pick-up and delivery operations for a specific carrier at a facility. These pick-up and delivery time windows are for the facility/carrier combination and are not related to earliest and latest available to ship or delivery date and time of an order line.

**circuitry**

Applying to a truckload trip, indicates the difference between the actual distance covered by a trip and the direct distance between the trip's origin and final destination. Circuitry is expressed as a percentage of the direct distance.

**contents firm**

Applying to a delivery, indicates that its composition (but not its routing) is firmed. Delivery Lines cannot be added to or removed from such a delivery. The delivery itself can be freely assigned to or unassigned from any trip. See 'firming, page Glossary-4.

**continuous move**

A sequence of trips that a single truck can serve as one uninterrupted mission.

**cross-docking**

Multiple intermixed load consolidations and/or deconsolidations, both inbound and outbound, that occur at the same point. In cross-docking, the contents of multiple inbound trips may be broken down and re-combined into multiple outbound trips.

**D****deadhead**

An empty trip used to connect loaded trips into a continuous move.

**deadhead distance**

The distance that a truck travels unloaded between loaded trips in a continuous move.

**dead stops**

A stop on the itinerary of a multi-stop truckload that has no pick-up or drop-off activity; that is, no orders are loaded or unloaded at that stop.

**delivery**

A collection of delivery lines that share a specific common origin and destination and will travel together from that origin to that destination.

**delivery leg**

A direct traversal by a delivery between two locations through a consistent means of transport, where consistent means that any change of vehicle is transparent to the shipper.

**delivery line**

A specified quantity of a specified type of item to be transported from a specific location to another specific location, with, potentially, a specific availability date/time and/or delivery deadline.

**delivery window**

The time between a delivery line's earliest delivery date/time and latest delivery date/time.

**dock**

A parking location at which trips can be loaded or unloaded. This could be a multipurpose dock or a dedicated shipping or receiving dock.

**E****empty trip**

A trip of any mode that does not have any orders assigned to it.

**exception**

An alert or an indication that a potential problem or opportunity exists with the input or the output of a plan.

**F****facility**

An organization, customer site, supplier site, or carrier site that has been enabled for transportation planning.

Multiple companies are involved in transportation: a shipper, its customers, its suppliers, and its carriers. Each of these companies may have facilities associated with them. These could be receiving or shipping locations, consolidation centers, deconsolidation centers, or cross-docking facilities. The facilities may have specific tasks and charges associated with them.

**firming**

The process of marking trips, deliveries, and continuous moves to be maintained in a desired state. They can be given different firm statuses:

- Trips: Not Firm, Routing Firm, Routing and Contents Firm
- Continuous Moves: Firm, Not Firm
- Deliveries: Not Firm, Contents Firm, Routing and Contents Firm

Note that a delivery inherits its firm status from the trip it is assigned to or retains the firm status that it was captured in when snapshot from the transportation execution system.

**freight class**

A category used by the less-than-truckload industry to classify commodities for rating freight. Freight class is defined as a lookup type in the Oracle Shipping application for use with Oracle Transportation Planning.



**freight terms**

An agreement indicating who (the buyer or the seller) pays the freight costs of an order and when they are to be paid.

**G****gross weight**

Weight of the products being shipped plus the weight of any packaging used for shipping.

**K****key performance indicators**

Aggregations of plan output data or recapitulations of plan input data showing the quality of the plan. Key performance indicators analyze the efficiency and quality of the solutions produced and provide transportation planners with a means to judge the effectiveness of their planning processes. They enable planners to correct problems in these processes and to continuously improve them.

**L****lane**

A transportation corridor connecting an origin region to a destination region; for example, San Francisco to Hong Kong. Lanes can be defined with regions and zones as origins and destinations. Each lane has information such as carrier freight rates and supported equipment attached to it.

**lane group**

A set of lanes served by a common carrier and mode of transport.

**layover**

The time a driver spends off-duty while away from home before completing his or her current assignment. Layovers are typically required due to legal regulations that limit daily driving and duty time. Layovers enforced legally do not incur charges while layovers caused due to other factors may incur charges.

**less-than-truckload**

A movement of freight less than a full truckload or a carrier specializing in such movements.

Less-than-truckload movements typically consist of multiple pieces destined for a single location. Less-than-truckload carriers typically operate fixed, scheduled, hub-and-spoke truck networks over which individual shipments can travel between various origins and destinations.

Costs per unit of cargo for less-than-truckload movements, while significantly higher than those for nearly full truckload moves, are much lower than those for parcel carriers. As less-than-truckload carriers optimize their pickup, delivery, and handling systems for relatively large pieces, they apply minimum charges per shipment.

#### **load consolidation**

Methods used to group deliveries to obtain reduced costs and/or improved utilization of vehicles. Consolidation can occur by market area grouping, according to scheduled deliveries, or using pooling services.

#### **LTL**

See 'less-than-truckload., page Glossary-5

#### **M**

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#### **mode of transportation**

A broad method of transportation. Modes of transportation include Parcel, Less-than-Truckload, Truckload, Air, Ocean, and Rail.

#### **multi-stop truckload**

A truckload that picks up goods and/or drops them off in more than one location. Heterogeneous shipments are combined to form multi-stop truckloads. While the truck will move less than fully loaded for some part of its trip, this method can still bring great economies in comparison with less-than-truckload or parcel movements.

#### **N**

#### **net weight**

Weight of the products being shipped without considering the packaging.

#### **not firm**

Applying to a trip, continuous move, or delivery, having neither its contents nor its itinerary firmed.

#### **O**

#### **order**

A collection of (various) items (in various quantities) specified by a person or organization to be transported from (various) originating locations to (various) destination locations. An order is a collection of one or more order lines; for example, a purchase order, sales order, or internal move order.

**order line**

An element of an order representing a specified quantity of a specified type of item to be transported from a specific location to another specific location.

**original equipment manufacturer (OEM)**

A manufacturing company that owns the product designs that it sells and must manage its supply chain whether the manufacturing processes are internal or are outsourced to manufacturing partners.

**outside processing**

Performance of manufacturing or other steps for an original equipment manufacturer (OEM) by a contract manufacturer or other external organization.

**P****package**

A physical grouping (box, carton, tote, skid, pallet, etc.) of delivery line elements, to be transported indivisibly from the same origin to the same destination with the same availability date/time and/or delivery deadline, if any. A package contains one or more delivery line elements. The elements of a delivery line may be carried in different packages.

Delivery lines and packages have an overlapping relationship. For instance, if an order contains two delivery lines, (1) 10 handheld computers and (2) 20 cell phones, they could be packed in two packages, each package holding 5 handheld computers and 10 cell phones. In implementation, this would involve splitting the delivery lines into new lines, which would not span multiple packages.

**pallet**

Platforms or other devices that unitize load items for productive handling. Instead of handling each package or item individually, facility personnel can move many packages or items on a pallet.

**parcel**

Movement of goods by carriers specialized in small packages.

Parcel carriers operate similar to less-than-truckload carriers in that they carry distinct pieces over hub-and-spoke networks. The handling systems, however, are designed to carry very high volumes of very small packages. Due to the intense cost of such systems, parcel carriers demand a high cost per unit of cargo weight. Most corporate shippers make use of parcel services only for the very smallest of shipments.

**planning horizon**

A date and time range specified by the Plan Start and Plan End Dates (also called the

plan time horizon). The planning system considers all the delivery lines that are available to ship in this time range.

**pooling**

A transportation optimization strategy in which shipments from different origins might travel separately by higher-priced modes to consolidation or pooling points, and then join together for line-haul by a lower-priced mode. This specific configuration is typically called inbound pooling.

When this occurs in reverse (that is, lower-priced line haul is deconsolidated to higher priced modes with shipments traveling separately), the process is called outbound pooling. Both inbound and outbound pooling may take place at designated pooling points.

**preferred carrier**

A carrier to which a shipper has made carrier commitments (see 'carrier commitment) or a carrier preferred by the shipper's customer., page Glossary-2

**R****regions**

Predefined administrative regions such as cities or states.

**related trips**

Trips that have at least one delivery or a continuous move in common.

Trips contain deliveries. Sometimes, the same delivery can have delivery legs on multiple trips. When a trip is released, the deliveries that are on the trip are also released. To release a delivery without all of its corresponding trip(s) makes the release process incomplete. Therefore, Oracle Transportation Planning releases all of the trips that make up the delivery's itinerary. Even if related trips are not selected for release, the system releases them because they are part of the itinerary of a delivery on the trip selected for release.

**release**

The process of releasing plan output to the transportation execution system.

**request date**

The date a customer requests products to be either shipped or received.

**routing and contents firm**

When applied to a delivery, having both its itinerary and its composition firmed. You cannot add or remove delivery lines, unassign the delivery from any of the trips it is on, or assign it to any other trip.

When applied to a trip, having both the itinerary and schedule of the vehicle as well as the composite deliveries firmed. You cannot change either the trip's itinerary and schedule or the deliveries on it.

**routing firm**

When applied to a trip, having only the itinerary and schedule of the vehicle firmed. The trip attributes cannot be changed, but deliveries can be added to or removed from the trip.

**S**

**shipper**

The company responsible for (planning and controlling) the movement of goods.

**shipping window**

See 'available to ship window.', page Glossary-2

**ship set**

Group of order lines within an order that need to ship together from their common origin to a common destination and have the same scheduled ship date.

**simple consolidation**

A transportation optimization strategy that groups together shipments traveling from the same origin to the same destination in the same time frame.

**snapshot**

The process of capturing setup and transaction data from the transportation execution system for input to the transportation planning engine.

**stop**

A facility where a pick-up activity or drop-off activity (or both) occurs.

**T**

**tare weight**

The difference between gross weight and net weight.

**transportation execution system**

Term used to collectively refer to the Oracle Transportation Execution and Oracle Shipping Execution applications.

**trip**

A sequenced series of vehicle trip legs constituting a continuous movement by a

consistent means of transport.

**trip leg**

A direct traversal between two locations by a consistent means of transport. This may mean a direct origin-to-destination transit through less-than-truckload or parcel carrier, a direct truckload move, or the transit between consecutive stops of a multi-stop truckload movement.

**truckload**

A movement of goods involving the hiring of an entire truck or a carrier specializing in such movements.

With such carriers, a shipper essentially hires a truck and driver to travel between two points. The shipper decides how the truck reaches the destination from the origin; the route, the stops made along the way, and what needs to be done at each stop. The carrier can charge the shipper based on distance, number of stops, etc., regardless of the amount of cargo carried at any point. While truckload offers the lowest rates per unit of cargo when the hired equipment is well utilized, a shipper pays for the entire truck or trailer even if the amount of cargo carried therein is small.

**U**

**unassigned delivery**

A delivery that is not assigned to any trip.

**V**

**vehicle availability**

The number of trips that can be operated by specific carriers with specific vehicle types on specific lanes or lane groups during a specific time period (day, week, month, etc.).

**vehicle category**

A grouping you can define that aggregates similar vehicle types. Examples of Vehicle Category may include Refrigerated, Flatbed, or Dry Van.

**vehicle class**

A high level grouping of vehicle types. Vehicle class has a fixed list of values including Chassis, Intermodal Container, Maritime Container, Tractor, Trailer, Truck, and Vehicle Configuration.

**vehicle type**

A specific kind of vehicle. In addition to having a vehicle class (and, potentially one or more vehicle categories), a vehicle type has additional attributes such as load capacities, dimensions, features, and doors.

## **W**

### **weight break**

A designated weight limit for a rate change.

### **workday calendar**

A calendar that identifies available workdays for one or more organizations or facilities. Oracle Transportation Planning plans and schedules trips based on a facility calendar's available workdays.

## **Z**

### **zone**

A geographic region, such as a country or a range of postal codes. For example, a carrier may define a zone Western Europe that includes France, Italy, and England.





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